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# A COMPARISON OF THE SCIENCE BACKGROUND OF ELEMENTARY TEACHERS-IN-TRAINING AT THE UNIVERSITY OF ALBERTA, CALGARY AND THE UNIVERSITY OF ILLINOIS

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Comparisons between the products of two different educational systems are difficult and University of Alberta education students are as a group, both products of and prospective teachers for Canadian schools, not those of the United States. However when, as is true in elementary science in Alberta, objectives, course outlines, textbooks, other instructional materials, and recommended teaching procedures in one system are taken over almost intact from another country then it becomes important to attempt such comparisons. Any course of study implies certain expectations of the teachers who are to implement that course. If there is any doubt that such expectations are realistic, that they can be met by the teaching personnel available, the wisdom of adopting such a course of study is questionable.

Although standards vary widely even within a single state in the United States, the present Alberta course of study in elementary school science would probably be regarded as a "good" demanding course by most U.S. school people. If such a course were adopted by an Illinois school or school system and taught by a recently certified graduate of the University of Illinois College of Education, this teacher would have the following qualifications: (1) A B.Ed. degree in elementary education, (2) sixteen semester hours in science courses at the university level, (3) possibly a course in science methods although this is offered on an elective basis and is not required for certification.

When this course is taught by a recently certified student of the University of Alberta, the teacher would have the following preparation, depending on the certificate: (1) If holding a Junior Elementary certificate, no courses in science at the university level and a half course in education which combines methodology and a survey of the content to be taught. (2) If holding a Standard Elementary certificate, one university course in science (physical geography for the group in this study) and a half course in science education with some review of the science to be taught. (3) If holding a Standard Secondary certificate, preparation would vary with the major and minor field.



Specifically the contrast between the holder of a B.Ed. degree including two years of university science and the holder of a Junior Elementary certificate with no work in science at the university level suggests the possibility that what might be a reasonable expectation for the first teacher would be quite unreasonable for the second.

### **The Problem**

This paper is an attempt to make more exact comparisons of the science background of the two groups of teachers in regard to (a) scores on an achievement test in general science and (b) a closer examination of course work in high school and university.

### **Subjects**

The sample from the University of Illinois is the small group (23 students) taking the methods course in elementary science in the spring semester of 1957.<sup>1</sup>

This may be a biased sample in that registration for this course is voluntary. Students presumably might elect such a course because they felt weak in the area and desired further preparation before teaching, because they were interested in science and preferred a methods course in this field to other electives, or for a variety of trivial reasons. It is not known which of these motives caused students to register—or even if they cancelled out and gave what is, in effect, an unbiased sample.

The sample from the University of Alberta, Calgary is the groups registered for Education 229 (Junior Elementary Science Methods) and 286 (B.Ed. Elementary Science Methods) during the 1961-62 term.

### **Measuring Instruments and Procedure**

The instrument used to measure knowledge of science was the Read General Science Test.

This is recognized as an adequate achievement test for general science but there is some question of its validity for this level. It was designed for and standardized on U.S. high school students completing 9th grade general science. Forty per cent of the questions are from the area of physics, which reflects the test's original purpose and the attention given this subject in general science courses, but is an over-emphasis in terms of elementary school science.

Two rough estimates of the validity of this instrument have been obtained.

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<sup>1</sup>Data are adapted from Priscilla J. Eccles. "An Evaluation of a Course in Teaching Science in the Elementary School". Unpublished Doctoral Thesis, University of Illinois, 1958.



One was a comparison of the achievement of the Junior Elementary group with that of a group of students in the B.Ed. after B.A. program at the University of Alberta, Calgary who are enrolled in the secondary science methods course. The majority of these students have strong science backgrounds. The results are given in Table I.

TABLE I

COMPARISON OF ACHIEVEMENT ON READ GENERAL SCIENCE TEST BY UNIVERSITY OF ALBERTA, CALGARY STUDENTS HOLDING B.S. OR B.A. DEGREES (ED. 480S) AND STUDENTS IN JUNIOR ELEMENTARY SCIENCE METHODS COURSE (ED. 229)

Subjects	n	Mean	S.D.	Range (75 items)
Ed. 480S .....	27	64.03	5.06	45-73
Ed. 229 .....	125	55.5	6.73	40-69
		8.53*		

\*t test indicates difference between means is significant at 5% level.

The test does appear to measure gross differences in subject matter background. It is also encouraging that not even in the advanced group did any individual answer all the questions correctly.

A comparison was also made between the scores of the B.Ed. Elementary group and scores made by the same group on the Iowa Tests of Educational Development, Test II, Background in the Natural Sciences. This test has been designed for use through grade 12, and examination of the individual items also leads to the conclusion that it is less specific to a particular course (9th grade general science) than is the Read Test. The product-moment coefficient of correlation between the Read Test and the Iowa Test was .62.

With the reservations noted, it seems reasonable to assume that group scores on this test do give a crude but valid estimate of the command of the subject matter of elementary school science.

For all subjects the achievement test was given near the beginning of the methods course. The information concerning high school preparation was taken from questionnaires filled out by the students rather than from official records and may therefore be subject to minor inaccuracies.



Test Results

TABLE II

ACHIEVEMENT ON READ GENERAL SCIENCE TEST:  
UNIVERSITY OF ALBERTA, CALGARY JUNIOR  
ELEMENTARY STUDENTS (ED. 229) AND UNIVERSITY  
OF ILLINOIS B.ED. ELEMENTARY STUDENTS ED. 332)

Subjects	n	Mean raw Score: 75 items	S.D.
Ed. 229—U.A.C. ....	125	55.5	6.73
Ed. 332—U. of I. ....	23	55.22 .28 <sup>1</sup>	7.53

<sup>1</sup>t test indicates difference in means is *not* significant.

TABLE III

ACHIEVEMENT ON READ GENERAL SCIENCE TEST:  
UNIVERSITY OF ALBERTA, CALGARY JUNIOR  
ELEMENTARY STUDENTS (ED. 229) AND UNIVERSITY  
OF ALBERTA, CALGARY B.ED. ELEMENTARY  
STUDENTS (ED. 286)

Subjects	n	Mean raw Score: 75 items	S.D.
Ed. 229 .....	127	55.5	6.73
Ed. 286 .....	40	55.97 .47 <sup>1</sup>	6.01

<sup>1</sup>t test indicates difference is *not* significant at 5% level.

TABLE IV

ACHIEVEMENT ON READ GENERAL SCIENCE TEST:  
UNIVERSITY OF ALBERTA, CALGARY B.ED. ELEMENTARY  
STUDENTS AND UNIVERSITY OF ILLINOIS B.ED.  
ELEMENTARY STUDENTS

Subjects	n	Mean raw Score: 75 items	S.D.
U.A.C. ....	40	55.97	6.01
U. of I. ....	23	55.22 .75 <sup>1</sup>	7.53

<sup>1</sup>t test indicates difference is *not* significant at 5% level.

The results given above do not confirm expectations of superior achievement for students with one or two years of university science.



Science Courses

TABLE V  
HIGH SCHOOL AND UNIVERSITY SCIENCE COURSES:  
RECENT GRADUATES OF ALBERTA HIGH SCHOOLS

A: Junior elementary students, University of Alberta, Calgary								
n	Courses						Univer- sity Courses	Total
	Sci 9	Sci 10	Sci 20	Biol 32	Chem 30	Phys 30		
1	x	x	x		x	x	3	8
1	x	x	x	x	x		1	6
3	x	x	x	x	x	x		6
54	x	x	x	x	x			5
11	x	x	x		x	x		5
4	x	x	x	x		x		5
3	x	x	x	x				4
2	x	x	x		x			4
1	x		x		x	x		4
1		x	x	x	x			4
1			x	x	x			3
1	x			x				2

B: B.Ed. elementary students, University of Alberta, Calgary								
1	x	x	x	x	x	x	3	8
1	x	x	x	x	x	x	1	7
17	x	x	x	x	x		1	6
1	x	x	x		x	x	1	6

TABLE VI  
HIGH SCHOOL AND UNIVERSITY COURSES: STUDENTS  
WHO WROTE RECENT ALBERTA MATRICULATION  
EXAMINATION BUT DID NOT FOLLOW STANDARD  
CURRENT ALBERTA HIGH SCHOOL PROGRAM

A: Junior elementary students, University of Alberta, Calgary								
n	Grades			Courses			Univer- sity Courses	Total
	9	10	11	Biol 32	Chem 30	Phys 30		
1	x	x	x	x	x	x		6
1	x	x	x	x	x			5
2	x	x		x		x		5
1	x	x	x	x				4
1	x	x		x		x		4
2								
1								
1								
2	est. 2 years European secondary			x	x			

B: B.Ed. elementary students, University of Alberta, Calgary								
1	x	x	2		x	x	1	7
1	x	x	x	x	x	x	1	7
3	x	x	x	x	x		1	6

TABLE VII

HIGH SCHOOL AND UNIVERSITY COURSES: STUDENTS  
WHOSE HIGH SCHOOL WORK WAS DONE OUTSIDE  
PROVINCE—OR AT SUCH AN EARLY DATE THAT  
PRESENT MATRICULATION COURSES NUMBERS ARE  
NOT APPLICABLE

A: Junior elementary students, University of Alberta, Calgary

n	Grade					University Courses	Total
	9	10	11	12	13		
1		1	2	3		3	9
2	1	1	2	3			7
4	1	1	2	2			6
7	1	1	1	2			5
3	1	1	1	1	1		5
1	1	2	1	1			5
1	est. number of years, European secondary				(5)		5
1	1½	1	1	1	1		4.5
1	1	1	1	1			4
1	est. number of years, European secondary				(2)	2	4

B: B.Ed. elementary students, University of Alberta, Calgary

1	1	1	2	2		1	7
1	1	2	1	2		1	7
1	1	1	1	2		1	6
1	1	1		1		1.5	4.5*
1	1	1				1	3 *

\*transfer students from U.S.

TABLE VIII

HIGH SCHOOL AND UNIVERSITY COURSES: UNIVERSITY  
OF ILLINOIS B.ED. ELEMENTARY STUDENTS

n	Sci	Biol	Courses Chem	Phys	Other	Years of University Science	Total
2	x	x	x	x		2	6
5	x	x	x			2	5
1	x				x	2	5
7	x	x				2	4
1		x			x	2	4
2	x		x			2	4
1		x	x			2	4
2	x					2	4



TABLE IX  
SUMMARY: COURSE WORK IN SCIENCE, ELEMENTARY  
TEACHERS-IN-TRAINING, UNIVERSITY OF ALBERTA,  
CALGARY AND UNIVERSITY OF ILLINOIS

U.A.C. B.Ed. Elem.		U.A.C. J. Elem.		U. of Ill. B.Ed. Elem.	
n	Total No. of Years	n	Total No. of Years	n	Total No. of Years
		1	9		
1	8	1	8		
5	7	2	7		
22	6	9	6	2	6
		84	5	6	5
1	4.5	1	4.5		
		13	4	11	4
1	3	5	3	2	3
		1	2		
Mean: 6.08		Mean: 4.9		Mean: 4.38	

The above table is distorted by (a) considering high school and university courses as equivalent in determining totals, since presumably a university course is taught in greater breadth and depth and (b) equating two semesters in a U.S. university with one term in a Canadian, although it seems likely that a semester course, while less thorough than a term course, is more than a half course. Both distortions tend to over-emphasize the difference between the preparation in science of U.S. and Alberta teachers.

Discussion

Comparison of results on the Read General Science Test and of the course work in high school and university suggests that the difference in science background between teachers-in-training at the University of Illinois and the University of Alberta, Calgary is negligible.

This could be considered more a cause for dissatisfaction among those responsible for training and certification of teachers in the State of Illinois than a cause of satisfaction for those with similar responsibilities in Alberta. In particular the results and other, more subjective data, from the original Illinois study raise questions concerning the quality of the university science courses required of these students who seem to be failing to achieve a level of understanding that would result in the ability to retain and apply principles.

Alberta B.Ed. Elementary students do appear to have an advantage in course work although this is not reflected in an increased

score on the Read test. This could be considered a result of using an inadequate measuring instrument and no inquiries were made concerning content and quality of the science course taken. In all but one case the course was physical geography. An examination of individual items on the test indicates that approximately 12 of the 75 questions could have been covered in such a course.

In so far as teaching ability is affected by knowledge of subject matter, it would appear sensible to make similar demands of all three groups in terms of content to be taught and teaching techniques to be employed. On the other hand it may be true that new courses of study in elementary science require a subject matter mastery beyond that exhibited by any of these three groups of prospective teachers. An examination of the test items on the Read General Science Test leads to the opinion that almost complete mastery of science to this level would be required to teach the new courses competently.

No research is at present available as to the degree of subject matter mastery necessary to teach elementary science or as to the effect of inadequate understanding on the quality of teaching and pupil achievement. The author hopes that a study now in the planning stage will make possible some tentative answers to these questions.

# CHARACTERISTICS OF STUDENTS WHO FAILED GRADE SEVEN IN EDMONTON JUNIOR HIGH SCHOOLS, 1951-52

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## The Problem

The purpose of this investigation was to make a thorough study of the student who fails, by particular reference to four areas:

1. Teachers' ratings.
2. Environmental factors.
3. Achievement and ability.
4. Academic record.

The population of the study was made up of the 212 failures in grade seven during the years 1951 and 1952 in the Edmonton Public School system. Grade seven was chosen as the focal point of the study for three main reasons:

1. The prior educational progress of these students could be assessed.
2. The post grade seven school achievement of these pupils could be evaluated.
3. Grade seven is the mid-point on the educational ladder toward a high school diploma.

The years 1951 and 1952 were chosen particularly so that by 1959, the year of the study, the students under consideration would have had sufficient time to complete their education.

It was hoped to find partial answers to questions such as these: What influence did the student's health have on his school progress? What is the relationship between failure and the father's occupation? What is the relationship between age at grade seven failure and the I.Q.? What is the relationship between age at grade seven and drop-outs from the city system? What is the relationship between a pupil's age at grade seven failure and his achievement prior to grade seven? What is the relationship between achievement prior to grade seven and drop-outs from the city system? What are the probable chances of a grade seven failure completing high school? Should provision be made for other than regular classroom instruction for students who fail? Are these failing students merely biding their time until they reach the legal leaving age of fifteen so they may drop out of school?



### Survey of the Related Literature

In general the related literature supports three generalizations:

1. The present grade system for class grouping is most unsatisfactory.

2. Social promotion, progress at the pupil's maximum rate, and streaming are devices used to circumvent the objections to the rigid grade system.

3. Pupils must be dealt with individually. Each child has different rates of learning and growth from every other child. The duty of the school is to insure the maximum development of each child's potential ability.

### Literature on Promotional Practice

The related literature takes two divergent views. The first is that our present lock-step grade system is outmoded and should be replaced; the second is that there is nothing wrong with the grade system and present promotional practices will work provided the non-promoted child receives the individual attention he deserves.

Those authorities opposed to the graded curriculum state that the idea of individual difference is not recognized. Pupils at any grade level have a wide variation in ability. This difference, as Cook (9) notes, is present in grade one where there may be a spread of as much as four years in mental age. Dunlop (11), in a recent study, points out the wide range of abilities present in every classroom and stresses that teaching must be as individualized as possible. Within the grade framework enthusiastic teachers, small classes and systematic testing are needed for the slow learner.

Social promotion has its critics. Barlow (4) states that promotion loses its meaning unless it is earned and children under such a plan can become completely out-of-step with the school's programme. In support of Barlow, others like Anfinson (2) are not convinced that non-promotion is responsible for maladjustment to the school-room situation that is attributed to it.

Goodland (16) states that there is no panacea for taking care of the difficult problem of promotion or non-promotion. His study indicates that repeaters generally show a consistent pattern of undesirable growth characteristics and unsatisfactory school progress.

Hadley (17) points out that promotion to be significant must be based on marks that are meaningful. He is convinced that too subjective factors enter into the gradings assigned. Durost (12) supports this view by stating that teachers are inadequately trained to properly construct, administer or interpret test results. Carrothers

(7) carries this further and states that one failing of the school is its inability to measure adequately the increase in educational growth or show the public that educational growth has been made.

### School Drop-Outs

School systems are much concerned with the drop-out problem. It would seem logical to assume that there is a close relationship between school failure and drop-out. The student who is met with frustration, lack of success, and is negativistic in his attitude toward school is a potential drop-out. There has been too much idealistic talk of retaining all pupils in school. The general public are inclined to think that remaining in school and education are synonymous. Byrne (6) states flatly that it is neither desirable nor possible to retain all students in high school until graduation, but it may be possible to retain a larger portion of them by a better understanding of them and their problems.

### Sources of the Data

The data for the study were made available by the Edmonton Public School Board. This material was supplemented by reference to the files of the Provincial Department of Education. From the promotion sheets of all grade seven pupils in the years 1951 and 1952 the names of those pupils who had failed were listed. Altogether 212 cumulative record cards of failing students were examined and pertinent data recorded. To serve as a basis of comparison with the study sample a reference sample of 212 cumulative record cards was drawn from the files at the Edmonton Public School Board offices. From sixty-five hundred alphabetically arranged cards, every thirtieth card was drawn until 212 were in the sample. While this method did not provide a true random sample, it was considered that any bias in sampling introduced by the method would be negligible. It was believed that a basis of comparison would be helpful in four areas: with reference to the Laycock Mental Ability Test because statistics were lacking with respect to the normal distribution of scores of city pupils; with respect to fathers' or guardians' occupations; with reference to home status; and particularly with reference to the teachers' ratings on the six areas of personality development. The significance of the differences between the study sample and the reference sample was tested by  $\chi^2$  in each of the four areas mentioned above.

A careful study of the cumulative record cards revealed pertinent information that could be used to advantage in assessing these grade seven failures. The cumulative record card was supplemented by a separate attendance and progress card which included the



medical history of each child. The data from each student's set of cards were duly noted on summary data sheets under eighteen main headings. These larger headings were subdivided into as many as eleven subdivisions. This information was then coded on International Business Machine cards for analysis.

The data on the students' cards were divided into three main areas:

1. Pre grade seven.
2. Grade seven.
3. Post grade seven.

In addition the following study sample data were tabulated as contingency tables and tested for the existence of pertinent relationships using the  $\chi^2$  test.

1. The age at grade seven failure and the intelligence quotient.
2. The age at grade seven failure and the achievement prior to grade seven.
3. The age at grade seven failure and the drop-outs from the city system.
4. The father's or guardian's occupation and the intelligence quotient of the child.
5. The achievements of the repeated year in grade seven and drop-outs from the city system.

### Pre Grade Seven Study

To deal effectively with this particular area of the students' progress, academic achievement and the environmental factors of the 212 students in the study sample were examined as follows:

1. Age at grade one entrance.
2. Health factors.
3. Home status.
4. Father's occupation.
5. Achievement prior to grade seven.
6. Pre grade seven schooling in Edmonton.
7. Unit Scale Reading, grade four.
8. Spelling Ability Test, grade four.
9. Intelligence.

This information was presented in tabular form in the original study. The main information in these tables can be summarized as follows: In judging acceleration or retardation reference was made to Ayres' (3) scale of a two year span to represent normal progress for each grade. On this basis all the sample fall within the age span that is normal for the grade. Examination of health records in-

licated that only 9 per cent may have been adversely affected by poor health. Health reasons therefore may be discounted as a major reason for failure.

Abnormal home conditions were twice as frequent among the failing group as in the reference sample. The differences between the two groups when tested by  $\chi^2$  were significant at the .01 level of confidence.

A study of the socio-economic status of the home indicated that 58.5 per cent of the parents of the pupils in the study sample were in the unemployed, semi-skilled group. The reference sample showed only 15.5 per cent of parents in this group. Only 3.8 per cent of the study sample were in the managerial group as compared with 27.3 per cent of the reference sample.

The history of the academic progress in grades prior to grade seven revealed that the students who failed in grade seven were out of step academically before reaching grade seven. Over half the study sample had experienced failure in one or more grades, an additional thirty-one had been recommended (trial promotion) on one or more occasions. Those who did pass all grades were mainly borderline cases.

An examination of the reading scores of the study sample taken at grade four indicated that thirty-six students of the 212 scored normal or better scores, while 72.6 per cent showed reading disability varying from slight to serious. The spelling ability test also given at grade four indicated that this group of students were poor spellers. Only 35 per cent of those who took the test had normal or better than normal scores.

Low mental ability is referred to frequently in the related literature as one of the major reasons for failure. The recorded scores of the 212 failing students were examined and compared with the reference sample. I.Q.'s below 95 made up 59.6 per cent of the study sample as compared with 18.7 per cent of the reference sample. The study sample had 11 per cent of the test scores 105 and above as compared with 51.8 per cent of the reference sample. The differences between the study sample and the reference sample were significant at the .01 level of confidence.

### Grade Seven Study

The following aspects of student progress of the 212 study sample were tabulated:

1. Age at grade seven failure.
2. Attendance in grade seven, the year of failure.
3. The teachers' ratings of personality development at grade seven, the year of failure.



An examination of the data reveals that although all the study sample were of normal age at the time of grade one entrance, by the time they had reached grade seven 63.2 per cent were retarded from one to four years.

When attendance at grade seven was considered 77.3 per cent had attendance of 160 or more days. Forty-seven, or 22.7 per cent had attendance of fewer than 160 days. Considering that this latter group are generally poor achievers, the poor attendance may have had some bearing on the year's results.

The teachers' ratings of these students in personality development is of particular significance. Six areas in personality development (emotional control, creativeness, judgment, co-operation, dependability and courtesy) were studied first for the study sample and then compared with the reference sample. Teachers' ratings in these areas are made with reference to a handbook issued by the Edmonton Public School Board. This rating is done on the four point scale: 1. Very Good, 2. Good (average pupil), 3. Fair (a smaller number will rate 3), 4. Poor (only a very few poorly adjusted students would need to be rated as 4).

It is apparent that this group of failures were more trouble to their teachers than the normal group and generally have been rated lower in all six ratings of the personality development scale.

### Post Grade Seven Study

The study of the post grade seven phase of the educational history of the 212 failures was considered under the following headings:

1. The Reading Ability Test, grade eight.
2. The Spelling Improvement Test, grade eight.
3. Grade eight averages.
4. Grade nine averages.
5. Grade nine departmental transmuted scores.
6. Grade ten averages.
7. Grade ten credits earned.
8. Grade eleven averages.
9. Grade eleven credits earned.
10. Grade twelve results.
11. Drop-outs from the city system.

This information was presented in tabular form. Both the Reading Ability Test and the Spelling Improvement Test were normalized on the population of grade eight students in Edmonton Public Schools.

Of the original 212, eighty students dropped out of school at grade seven. Of those who took the Reading Ability Test, 53 per cent were below normal for their grade and 55 per cent of those who took the Spelling Improvement Test were below the scores considered normal for the grade.

By June of the grade eight year ninety-eight students had left school. Of the remainder only thirty-four made passing averages, but trial promotions and other devices enabled eighty-two to go on to grade nine.

Only seventy-two of the original 212 wrote the grade nine finals. Of these only one received an A standing, thirty received B, thirty-seven received C and there were four D standings. An examination of the transmuted departmental scores of this group of seventy-two shows a wide range of variation. A range of 70 per cent was shown in reading, a range of about 60 per cent was shown in Mathematics, Language, Social Studies and Science. Literature, which was based on a total mark of fifty, showed a range of nearly 40 per cent.

By the time the grade ten finals were written only forty-seven students remained; the others had dropped out of school. Nineteen, or 39 per cent, received averages of 50 per cent or better, and only seventeen actually completed a grade ten programme.

Only twenty-two of the original 212 wrote the grade eleven finals. Of these only six secured an average of 50 per cent or better.

By the time grade twelve was reached only nine of the original 212 students remained in school. Of these one received matriculation, three received diplomas in Business Education, and one a General diploma. The other four did not receive diplomas.

The drop-out rate of the grade seven failures, when added cumulatively, is rather striking. Eighty students left school after failure in grade seven; a total of 130 by grade eight. This total is increased to 159 by grade nine, to 168 by grade ten and 203 at the end of grade eleven. Of the remaining nine who entered grade twelve, only five completed their course to receive a high school diploma, and only one received a matriculation standing.

### **Relationship of Selected Factors to Failure**

Certain pertinent factors affecting failure were tabulated and tested for significance.

Table I indicates a relationship between the age at grade seven failure and the intelligence quotient significant to the .01 level of confidence. The table shows that generally the older a student is in grade seven the lower his intelligence will be. This table underlines the importance of intelligence as one of the factors in retardation.



TABLE I  
DISTRIBUTION OF AGE AND I.Q. AT  
GRADE SEVEN FAILURE

Age	I.Q.						Blank	Total
	Below 74	75 to 84	85 to 94	95 to 104	105 to 114	115 to 124		
16-7 and over .....	2	0	0	0	0	0	0	2
15-7 to 16-6 .....	6	4	1	1	0	0	2	14
14-7 to 15-6 .....	7	14	10	5	1	0	7	44
13-7 to 14-6 .....	2	15	32	16	4	0	5	74
12-7 to 13-6 .....	0	6	15	34	10	2	7	74
12-6 or less .....	0	0	0	1	2	1	0	4
Totals .....	17	39	58	57	17	3	21	212

TABLE II  
AGE AT GRADE SEVEN FAILURE AND  
ACHIEVEMENT PRIOR TO GRADE SEVEN

Age	Progress						Blank	Total
	Repeated Two or More Grades	Repeated One Grade	Recommended Two or More Grades	Recommended One Grade	Clear Passes	Accelerated One Year		
16-7 and over .....	2	0	0	0	0	0	0	2
15-7 to 16-6 .....	8	0	1	0	0	0	5	14
14-7 to 15-6 .....	27	10	1	0	0	0	6	44
13-7 to 14-6 .....	4	56	0	5	8	0	1	74
12-7 to 13-6 .....	0	4	5	18	42	0	5	74
12-6 or less .....	0	0	0	1	2	1	0	4
Totals .....	41	70	7	24	52	1	17	212

Table II examines the possible relationship between the age at grade seven and the academic achievement prior to grade seven. This table indicates that those who are overage in grade seven at the time of failure are overage because of failure in elementary grades. More than half the sample, 52.4 per cent, had repeated one or more grades in their earlier school years. The relationship be-

tween age in grade seven and achievement prior to grade seven is significant at the .01 level of confidence.

What is the relationship between the age at grade seven failure and drop-outs from the Edmonton city system? Table III examines this relationship.

TABLE III  
AGE AT GRADE SEVEN FAILURE AND  
DROP-OUTS FROM THE CITY SYSTEM

Age	Drop-Outs						Total
	At Grade 7	At Grade 8	At Grade 9	At Grade 10	At Grade 11	At Grade 12	
16-7 and over .....	1	0	1	0	0	0	2
15-7 to 16-6 .....	13	1	0	0	0	0	14
14-7 to 15-6 .....	30	10	1	1	2	0	44
13-7 to 14-6 .....	23	24	14	9	2	2	74
12-7 to 13-6 .....	12	14	13	17	11	7	74
12-6 or less .....	0	1	0	1	1	1	4
Totals .....	79	50	29	28	16	10	212

Table III indicates that the older students generally drop out first. Of the sixteen oldest students in our study sample, fifteen had dropped out by grade eight and the other in grade nine. In detecting potential drop-outs at the grade seven level, the age factor is an important prognosticator of an imminent drop-out. The relationship between age at grade seven and drop-outs from the city system is significant at the .01 level of confidence.

Table IV examines the relationship between the fathers' occupations and the intelligence of the children that make up the study sample.

TABLE IV  
FATHERS' OR GUARDIANS' OCCUPATIONS AND  
INTELLIGENCE QUOTIENT (LAYCOCK MENTAL ABILITY  
TEST)

	Below 74	75 to 84	85 to 94	95 to 104	105 to 114	115 to 124	Blank	Total
Unemployed .....	1	2	3	1	0	0	1	8
Unskilled .....	4	9	12	11	1	0	3	40
Semi-skilled .....	5	14	15	22	9	1	11	77
Skilled .....	6	13	27	21	5	2	5	79
Professional .....	1	1	1	3	1	0	1	8
Totals .....	17	37	58	58	16	3	21	212

The relationship between the fathers' occupations and the intelligence of the children when tested by  $\chi^2$  was not significant.



### **Conclusions Respecting Progress Prior to Grade Seven**

1. Late starting in school was not a factor in later retardation. All of the pupils in the study sample began grade one within normal age limits.

2. More than half of the 212 had failed once or more during their elementary school years. An additional 14.1 per cent had received trial promotions on one or more occasions. There was ample evidence to indicate that these students were having difficulty in school prior to reaching grade seven.

3. These students were handicapped by low intelligence. A comparison of the study sample with the reference sample indicated 59.6 per cent of the failures as against 18.7 per cent of the reference sample had I.Q.'s below ninety-five. Only 11 per cent of the failures, as compared with 51.8 per cent of the reference sample, had I.Q.'s above 105. The majority of the students in the study sample could not proceed at a normal rate because of a lack of ability.

### **Conclusions Respecting the Grade Seven Study**

1. At the time of failure in grade seven 63.2 per cent were over-age for their grade. Since they all started school within normal age limits this retardation was due to failure in elementary grades.

2. The failing students rated significantly lower on all six areas of the personality development scale on ratings given by the teacher than did the reference sample. The greater number of 3 and 4 ratings in the study sample was an indication that these pupils had much more difficulty adjusting to school than the average student.

### **Conclusions Respecting the Post Grade Seven Study**

1. Eighty students dropped out of school at grade seven, 159 by grade nine, 186 by grade ten and 203 by the end of grade eleven. A large number of these students had apparently "just waited" until they were of legal school leaving age.

2. Five students of the original sample of 212 completed high school. The chances of a grade seven failure completing high school seems to be about two in one hundred.

### **General Conclusions With Respect to Failure**

A study of the data indicates certain factors that caused failure at grade seven:

1. Low intelligence.
2. Poor achievement in elementary grades.
3. Poor attitude toward school.
4. Poor socio-economic status.

### **Implications With Respect to Non-Promotion as a Policy**

Of these 212 students who failed in grade seven, 63.2 per cent were overage for their grade because of previous failure or trial promotion. Certain questions arise with respect to these overage students: How did they adjust socially with younger students in the classroom? How did they do in sports? Did they become problems in the classroom? The study of the six areas of personality development indicates that there were areas of maladjustment for these students. It would seem that previous failure and poor achievement had conditioned these students to expect little success from school.

About 60 per cent of the failures had I.Q.'s below ninety-five. It would appear that this group is seriously handicapped with respect to making normal progress in school. It would seem that they could have benefitted from some type of programme apart from regular classes.

### **Implications With Respect to Drop-Outs**

A number of these students remained in school only until they reached the legal age of school leaving. It would seem likely that a number left school simply because the school curriculum had nothing to offer them. Should consideration be given to a general broadening of the curriculum to provide for those of lower intelligence? Should there be classes specifically for these students with a special programme of studies?

### **Implications With Respect to the Present Experiment in Division I**

An experiment is being tried in several Edmonton City schools with respect to three streams in Division I (grades one, two and three): an accelerated programme of two years, a regular programme of three years and a four year programme for the slow learner. The particular value of the programme is that students take the same work but at different rates according to their abilities.

No assessment of this programme has been made as yet but it is the first major step in recognition of individual differences. Calgary has had a similar plan for a longer period of time and Gillespie (15) in his assessment of it notes that the four year programme students do not achieve as well as the repeaters, and suggests it may be caused by the fact that teachers do not treat them differently from others in the class. It would appear that this experimental plan should provide separate classes for the slow learners. With this addition, the experimental plan may have partial answers to two of the major problems of promotion: the retardation of students is not as noticeable, and keeping the slow learners together will have the effect of keeping students of the same age group together. This



should reduce the problem of social maladjustment, and as students do not repeat but proceed at their own pace it should prevent the twin evils of boredom and frustration that have plagued the repeater in the past. The ultimate extension of this plan, with special classes for slow learners, to Divisions II and III in the entire school system, could possibly be the means of reducing the problems created by non-promotion in the Edmonton city system.

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AUTHOR'S NOTE: *Since this thesis was written the continuous progress plan has been made a city-wide, research project with all elementary schools participating.*

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# AN ANALYSIS OF THE WORK-WEEK OF A SAMPLE OF CENTRAL ALBERTA HIGH SCHOOL TEACHERS

M. R. FENSKE AND H. T. SPARBY

Varying opinions exist regarding the total time required for performing the activities considered to be part of a teaching load. Different opinions also exist regarding teacher attitude towards teaching load. Many claims have been made but few of these claims have been supported by factual evidence.

## The Problem

### *Nature of the Problem*

A teacher's actual teaching time is normally limited to those hours during which classes are legally conducted. Beyond this minimum working time a teacher may engage in a number of tasks which are related to classroom work but which are not necessarily performed either in the classroom or during school hours. These tasks too are considered to be part of a teacher's duties. The extent to which a teacher carries on these additional tasks has an important bearing on his actual total work. Knowing what a teacher's total teaching load is and the attitude of the teacher towards this load is of importance to administrators.

### *Statement of the Problem*

The purpose of this study was to analyze the work-week of a group of Central Alberta high school teachers. More particularly it was to examine:

1. The relationship between the following factors and the hourly work-week of teachers:
  - (a) Subjects taught.
  - (b) Teaching experience.
  - (c) Sex of teacher.
  - (e) Size of school.
2. The main areas of complaint that teachers have concerning their teaching load.
3. Teachers' and principals' estimates of a suitable teaching load.

### *Importance of the Study*

Teaching load is one of the factors in promoting or destroying teacher morale (3). Teachers who feel overloaded, either in actual working time or in comparison with other teachers, do not take as much interest in their work as they normally would. A knowledge

of what teaching loads are and what it is felt that they should be is of value to administrators in assigning teaching duties and extra-curricular activities. Proper teaching loads promote morale and cause the school to operate at a higher plane in terms of both efficiency and results.

### **Definitions of Terms Used**

#### *Teacher*

An individual who holds a valid teaching certificate and who is employed to instruct students, but who is not designated as a principal, assistant principal, vice-principal, or supervisor.

#### *Supervision*

Observing and controlling students engaged during school hours in required school activities exclusive of instruction.

#### *Extracurricular Activities*

Student activities sponsored by the school, but not compulsory in so far as student participation is concerned.

#### *Work-week*

The total weekly time in hours required to perform a number of varied tasks which are considered to be part of a teacher's normal duties.

### **Limitations**

#### *Geographical Area*

The schools included in this study were those located within an area extending across the province and bounded approximately on the north and south by lines through the cities of Edmonton and Calgary. Edmonton and Calgary schools were not included.

#### *Schools*

Only those schools were included which:

- (a) Offered standard instruction time to high school classes.
- (b) Had staffs, including administrators, which did not exceed ten in number.

#### *Personnel*

Only those teachers were included who devoted the major portion of their classroom instruction time to high school classes. In schools where Grade IX was departmentalized with the high school, the Grade IX classes were considered to be high school classes.

### **Method of Procedure**

A trial run of the questionnaire, to check its validity, was conducted late in September in the Lacombe School Division No. 56. The junior high school teachers were used as the sample. In



January the questionnaire was sent to the teachers and principals included in the study. Two weeks after receiving the replies a reliability check was conducted on the teacher returns. Completed questionnaires were received from two hundred and seven of the two hundred and thirty-six teachers (87.7 per cent return) and from seventy of the seventy-six principals (92.1 per cent return). The reliability check showed a 98 per cent agreement between first and second responses.

The teachers responding to the questionnaire were divided into various groups according to certain factors which were thought to have a possible relationship with teaching load. The median test (2) was employed in analysing the data. Both the .05 and the .01 levels of significance were used.

Findings

Table I presents a summary of the teaching load of the two hundred and six Central Alberta high school teachers included in this study. Considerable variation in the time spent on the various

TABLE I  
TEACHING LOAD FOR A SAMPLE OF 206  
CENTRAL ALBERTA HIGH SCHOOL TEACHERS

Duty	Total Time	
	Range	Median
Classroom Instruction .....	13.33 to 27.50	21.63
Supervision .....	0.00 to 12.80	2.48
Preparation .....	0.00 to 20.00	7.48
Marking .....	0.00 to 20.00	5.48
Extracurricular .....	0.00 to 15.00	1.00
*Other Duties .....	0.00 to 8.50	5.17
All Duties .....	26.00 to 68.0	43.27

\*Note: "Other" duties include: Students' Union, guidance, clerical, staff meetings, research projects, and Home and School Association meetings.

duties is evident. Three duties— classroom instruction, preparation of lessons and materials, and marking examinations and assignments—make up over 75 per cent of the median teaching load of 43.27 hours per week.

*Subjects Taught and Teaching Load*

Table II presents a summary of significant differences between the time spent on various duties by teachers of certain subjects and all other teachers. Teachers in the Home Economics-Industrial Arts and Business Education groups spent significantly less time on supervision than did other teachers. Teachers in the Social Studies-English Literature group spent significantly more time, while teachers in the Home Economics-Industrial Arts group spent significantly less time, on marking examinations and assignments than did other teachers. Teachers in the Home Economics-Industrial Arts group spent significantly less time on total teaching duties, than did other teachers. It may be concluded, therefore, that there is some relationship, though very weak, between subject field and total teaching load.

TABLE II  
SIGNIFICANT DIFFERENCES BETWEEN TIME SPENT ON  
VARIOUS DUTIES BY TEACHERS OF CERTAIN SUBJECTS  
AND ALL OTHER TEACHERS

Subject Field	Duties					
	Classroom Instruction	Supervision	Preparation	Marking	Extracurricular Activities	Total Time
Math.-Science .....	nil	nil	nil	nil	nil	nil
Soc. St.-Eng. Lit. ....	nil	nil	nil	.05	nil	nil
Foreign Languages .....	nil	nil	nil	nil	nil	nil
Business Education .....	nil	.05	nil	nil	nil	nil
Home Ec. Ind. Arts .....	nil	.01	nil	.05	nil	.05
Off Pattern .....	nil	nil	nil	nil	nil	nil
Others .....	nil	nil	nil	nil	nil	nil

*Teaching Experience and Teaching Load*

Table III presents a summary of significant differences between the time spent on various duties by teachers with different years of teaching experience and all other teachers. Teachers with 0 years of teaching experience spent significantly more time, while teachers with 21 or more years of teaching experience spent significantly less



time on preparation than did other teachers. Teachers with 0 years and those with 1 or 2 years of teaching experience spent significantly more time on extracurricular activities than did teachers of all other groups. No group had a total teaching load which was significantly different from the load of all other teachers.

TABLE III

SIGNIFICANT DIFFERENCES BETWEEN TIME SPENT ON  
VARIOUS DUTIES BY TEACHERS WITH VARYING YEARS  
OF TEACHING EXPERIENCE AND ALL OTHER TEACHERS

Year of Experience	Duties				
	Classroom Instruction	Preparation	Marking	Extracurricular Activities	Total Time
0 .....	nil	.05	nil	.05	nil
1 to 2 .....	nil	nil	nil	.05	nil
3 to 5 .....	nil	nil	nil	nil	nil
6 to 10 .....	nil	nil	nil	nil	nil
11 to 20 .....	nil	nil	nil	nil	nil
21 or more .....	nil	.05	nil	nil	nil

*Years of Training and Teaching Load*

No significant differences were found between the time spent on various duties by teachers with different years of teacher training and all other teachers.

*Sex of Teacher and Teaching Load*

An analysis of the teaching loads of male and female teachers revealed that the male teachers had spent significantly less time (.05 level) on marking examinations and assignments, but significantly more time (.01 level) on extracurricular activities, than their female counterparts. No significant difference existed between the total teaching load of male and female teachers.

*Size of School and Teaching Load*

An analysis of the teaching loads of teachers from variously sized high schools revealed that teachers in high schools employing 2 or 3 teachers spent a significantly greater amount of time (.01 level) in classroom instruction than did other teachers. There were no other significant differences between the time spent by teachers from variously sized high schools and all other teachers, nor were there any significant differences in their total teaching loads.

Satisfaction with Teaching Load

A summary of the data pertaining to total teaching load and teacher dissatisfaction is presented in Figure 1. Among the teachers whose total teaching load is less than 30 hours per week 80 per cent are satisfied. The remaining 20 per cent feel that they should be carrying a greater teaching load. The greatest degree of satisfaction with teaching load (90 per cent) is found in the group whose total load was between 30 and 35 hours per week. Of the remaining 10 per cent of this group, half thought they should be carrying a greater teaching load, and half desired a reduced teaching load. All teachers whose teaching load exceeded 60 hours per week were dissatisfied.

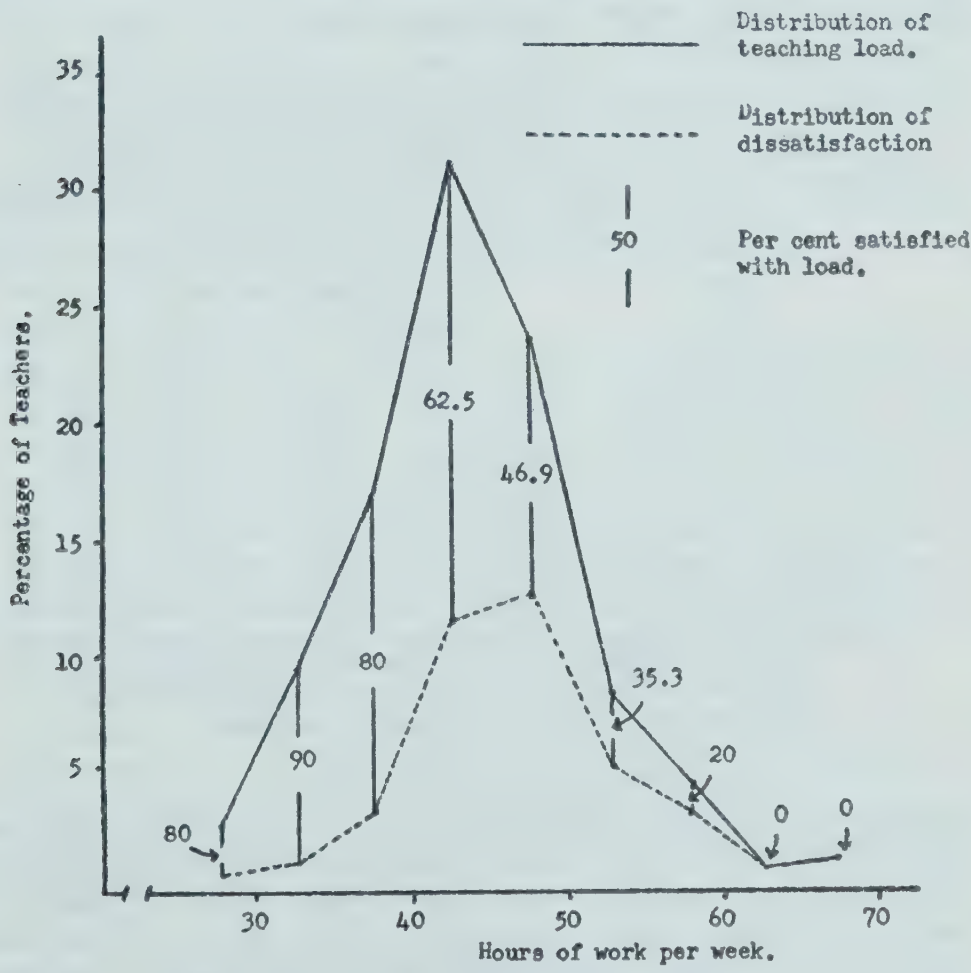


Figure 1.  
Distribution of Teaching Load and Dissatisfaction  
for a sample of 206 Central Alberta High School  
Teachers.

In general, Figure 1, illustrates that teacher satisfaction is apparently related to total teaching load in the sense that as the total teaching load increases the degree of teacher satisfaction decreases.



*Estimates of Suitable Teaching Loads*

Table IV presents a summary of significant differences between the time actually spent by teachers on various teaching duties and the time as recommended by principals and teachers.

The recommendations of both principals and teachers were significantly less than the actual time spent in (a) classroom instruction and (b) preparation. The recommendations of both principals and teachers were significantly greater than the actual time spent on extracurricular activities. The principals recommended that significantly less time be spent in marking. The total teaching loads recommended by principals and teachers were both significantly less than the total loads reported by the teachers.

TABLE IV  
SIGNIFICANT DIFFERENCES\* BETWEEN THE TIME  
ACTUALLY SPENT BY TEACHERS ON VARIOUS  
TEACHING DUTIES AND THE TIME AS RECOMMENDED  
BY PRINCIPALS AND TEACHERS

Group	Teaching Duties					
	Classroom Instruction	Supervision	Preparation	Marking	Extracurricular Activities	Total Time
Principals .....	.05	nil	.01	.01	.05	.01
Teachers .....	.01	nil	.05	nil	.01	.01

\*Note: The calculation of significant differences was based upon a comparison of principals' recommendations and teachers' recommendations with teachers' actual median time spent on the various teaching activities.

Summary and Conclusions

1. As reported by the teachers themselves, the average teaching load of central Alberta high school teachers is over 40 hours per week. The reported teaching loads ranged from 26 to 68 hours per week with the median time being 43.27 hours. Twenty-nine decimal six per cent of the teachers reported loads of less than 40 hours per week, while 15.5 per cent reported loads of 50 hours or more. Although there was considerable variation in teaching load, 52.9 per cent of the teachers reported loads within five hours of the median time for all teachers.
2. The subject field in which a teacher is working bears some relationship to the teacher's teaching load; but the relationship is not strong. In so far as total teaching load is concerned, there is

- a significant difference, at the .05 level, between the load carried by teachers in the Home Economics-Industrial Arts group and the load carried by all other teachers. The teachers in the Home Economics-Industrial Arts group spent significantly less time on total teaching duties than did the other teachers.
3. Length of teaching experience, amount of training, sex, and size of school are not significantly related to total teaching load. There is a significant relationship, however, between some of these factors and some of the duties which make up the total teaching load. An example of this was the time spent on extra-curricular activities. (See item 5 below.)
  4. The degree of teacher satisfaction with a teaching load is apparently related to the size of the load. As the size of the load increases, so also does the degree of teacher dissatisfaction. Among teachers with teaching loads between 35 and 40 hours per week, 20 per cent reported dissatisfaction. When teaching loads were between 45 and 50 hours per week, 53.1 per cent of the teachers were dissatisfied. When the loads were 60 hours or more, 100 per cent of the teachers were dissatisfied.
  5. Among the teachers included in this investigation, there is an unequal distribution of time spent on extracurricular activities. Of the teachers reporting, 34.9 per cent reported doing no extra-curricular work at all. Furthermore, there is a significant difference between the time spent on extracurricular activities by (a) teachers with 0 years teaching experience, (b) teachers with 1 or 2 years teaching experience, and (c) male teachers, and all other teachers in each case. Each of these three groups of teachers spent significantly more time on extracurricular activities than did other teachers.
  6. A decrease in the median hourly work-week for teachers was recommended by both the principals and the teachers themselves. These recommendations were significantly different from the existing teaching load. Teachers recommended a decrease to 40 hours; principals to 39.5 hours.

### Discussion of Results

Since this investigation revealed only one instance of a significant relationship between total teaching load and subject field, length of experience, amount of training, sex, and size of school, none of these five factors alone is apparently of major importance when determining total teaching loads.

Since there is some direct relationship between teaching load and teacher dissatisfaction, it should be possible to decrease teacher dis-



satisfaction by reducing the total teaching load. This could be achieved, of course, by adjusting the various duties which compose the total teaching load and/or arriving at a more equitable distribution of existing duties.

Although the number of hours per week spent in the activities required of a professional person is not necessarily the best criterion by which to judge the profession, it is nevertheless a convenient starting point for analysing the duties which a professional person is called upon to perform.

### Recommendations

The following recommendations are based upon the conclusions as previously stated:

1. The time which high school teachers are required to devote to classroom instruction should be reduced to about twenty hours per week. The over-all effect of such a reduction, plus the resulting reduction in time required to carry out other duties closely associated with classroom instruction, would be to reduce by two or three hours the total teaching load. This would bring the total load close to that recommended by the teachers included in this investigation. It should also increase teacher satisfaction and boost morale.
2. Supervision of extracurricular activities should be treated as a normal teaching duty. If it is treated instead as a voluntary duty, the results may well be total teaching loads between which unfavorable comparisons can be made. This situation can cause increased teacher dissatisfaction and decreased teacher morale. Administrators must accept the responsibility of assigning a fair distribution of extracurricular activities among teachers.

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# READING INTERESTS OF PUPILS IN THE INTERMEDIATE GRADES IN THE PUBLIC SCHOOLS IN A SMALL URBAN CENTER

EDWIN McKENZIE

## The Problem

The purpose of the study was to survey the reading interests of pupils in Grades 4, 5, and 6 in a small urban center. The information gathered covered the following points:

- (1) The amount and variety of reading done by the pupils in Grades 4, 5 and 6.
- (2) A comparison of the reading done between the boys and girls in these grades.
- (3) A comparison of the amount and variety of reading done between the poor, average and good readers.

## Method

The reading interests of 1,081 children were determined for a three-month period, January through March, 1958, by the use of a book check slip which each child completed after reading a book. In total, 5,482 slips were received.

In the interests of uniformity of procedure, the co-operation of the teachers was sought in supervising pupils participating in the survey. The teachers were instructed to allow the children complete freedom in their choice of books, but to emphasize that the survey in no way constituted a contest to see which child or class would read the greatest number of books during the three month period.

## Libraries

### *The Community Library*

The Canadian Library Association has approved certain requirements for satisfactory service in Canadian libraries. In comparing the number of books provided by the community library with the requirements advocated by the Canadian Library Association, it was found that the local library should have almost three times as many volumes for both adult and juvenile reading as are presently available. On the other hand the reader membership in both categories was only slightly below the standard suggested by the Canadian Library Association, namely twenty per cent of the city population.

The Public Library, although small in size, seems to be providing a service adequate to the present community. Judging by the cir-



ulation figures, the response by the juvenile readers to the services offered by the library is enthusiastic. The various programs planned by the children's librarian to persuade young people to use the library are being very well received, so much so that the present facilities are sometimes being strained to provide them.

### *The School Libraries*

The Senior High School central library is adequate in size and facilities. It plays a very important part in the organization of the school, but its services are seriously curtailed by the lack of a full-time librarian.

The library in the Junior High School is rather a makeshift affair, inadequate in both size and facilities to provide for the students in the building. The teacher-librarian is allowed two periods per week to supervise the library and to take complete charge of ordering, cataloguing and providing whatever service she can within the limits of the time provided.

Apart from the Composite High School and the Junior High School the remaining schools in the system provide library services by means of classroom libraries. The Board of Trustees provides a library grant of \$50.00 per room per year for books, and newly established classrooms are given a grant of \$100.00 per year for five years in order to establish a minimum library as quickly as possible.

## Findings

### *Children's Interests in Reading*

The study of reading interests was designed to determine: (1) the extent to which the pupils in the intermediate grades in the schools in Medicine Hat were making use of the library facilities in their classrooms, (2) whether there was any distinct pattern to the reading preferences of the children as they progressed through the grades, (3) if a child's reading ability influenced the number of books

TABLE I  
FICTION BOOKS

Section	Type of Book
1	Adventure Stories
2	Animal Stories
3	Stories of Other Lands
4	Fairy Stories and Folk Tales
5	Mystery Stories
6	Cowboy Stories and Stories of the West
7	Stories of Indians and Pioneers
8	Children's Stories
9	Sport Stories
10	Stories from the Basic Readers

he read and the type of books he chose, and (4) the difference between the reading choices of boys and girls.

Books were first classified as fiction and non-fiction and further classified as shown in Tables I and II.

TABLE II  
NON-FICTION BOOKS

Section	Type of Book
1	Scientific
2	History and Geography
3	Biographical
4	Other non-fiction books

TABLE III  
TYPES OF READING IN ORDER OF FREQUENCY

Grade	Order of Frequency	Type of Story	Per Cent Read
Four	1	Animal Stories	26.2
	2	Adventure Stories	15.3
	3	Children's Stories	13.7
	4	Non-Fiction	11.2
	5	Fairy Stories	10.3
	6	Children of Other Lands	6.9
	7	Social Studies	6.7
Five	1	Adventure Stories	24.1
	2	Non-Fiction	16.7
	3	Mystery Stories	13.6
	4	Children's Stories	13.5
	5	Animal Stories	13.1
	6	Social Studies	7.7
	7	Fairy Stories	6.5
Six	1	Adventure Stories	36.7
	2	Mystery Stories	25.8
	3	Animal Stories	9.3
	4	Non-Fiction	7.6
	5	Children's Stories	6.1
	6	Cowboy Stories and Stories of the West	4.9
	7	Biography	3.2

*Reading Preferences of Intermediate Grade Pupils*

A compilation of all books read during the period of the survey (three months) indicated very little difference in the average number of books read by the pupils in each of the grades. On the average each student read five books.

Table III shows by grade the types of reading in order of frequency. The first three sections in each grade account for 55.2 per cent of Grade 4 reading, 54.2 per cent of Grade 5, and 71.8 per cent



of Grade 6 reading. This suggests that Grade 6 concentrates its reading, while the lower grades are sampling over a much wider range of material. Grade 6 obviously prefers adventure and mystery.

#### *Reading Interests According to Reading Ability*

An attempt was made to discover whether a child's reading ability had an appreciable effect on the number of books he read or the type of books he chose.

The pupils were arranged according to reading ability as measured by the Stanford Reading Test, and then further subdivided into top, middle and bottom groups. Generally speaking the reading interests of these sub-groups did differ appreciably from the total groups, and the top group of readers in each grade read almost twice as many books as did those in the bottom group. The interest in Animal Stories evinced by the total Grade 4 population was apparently heavily weighted by the poorer readers who chose 33.4 per cent of their books from this category, a choice which was ten per cent higher than that of the top and middle groups.

Non-fiction books seemed to be a heavy favorite with the slow readers in both Grades 4 and 5. Almost a third of the choices of the poor readers in Grade 5 were from this category. It would seem that the poor readers' choice of books may have been influenced by the work they were doing in school. Those children who read well, read more, and the poor readers do not voluntarily turn to books for their entertainment but rather look upon reading as a task which they must do in order to succeed in their school work.

#### *Reading Interests According to Sex*

At the Grade 4 level Animal Stories, the most popular choice of the total group, was not the major choice of the girls. Boys chose almost twice as many stories about animals as did the girls. Boys chose stories about Children in Other Lands almost twice as often as the girls did, but this preference was reversed in Children's Stories which were almost twice as popular with the girls as with the boys. For the most part, at the Grade 4 level, the boys were more interested in non-fiction types of books than the girls were.

At the Grade 5 level the differences in interests between boys and girls became more evident. Adventure and Animal Stories were chosen almost equally by boys and girls, but the girls evinced a keen interest in Mystery Stories. Over twice as many books in this category were chosen by girls than by boys. This proportion increased even more in the field of Children's Stories where again the girls showed the greater interest. This trend in interest between boys and girls continued into Grade 6, where the girls' interest was

almost twice as great as the boys' in the categories of Mystery Books and Children's Stories. In the non-fiction category boys showed considerably greater interest than did girls.

*Most Popular Books and Authors*

The subjects of the present study were limited to the books available to them from the classroom, the home and public library, and thus the findings in this part of the study may be biased.

Table IV lists those books and authors which were chosen fifteen times or more by the pupils in Grades 4, 5 and 6. Only at the Grade 4 level were the most popular books chosen from the field which was most popular as revealed by the total survey. Grade 4 showed a decided preference for Animal Stories, and authors of

TABLE IV  
MOST POPULAR BOOKS AND AUTHORS

Grade	No. of Times Chosen	Title	Author
Four	28	Burgess Animal Stories	Thornton Burgess
	24	Chee-chee and Keeko	Charles Thorson
	25	Mickey Mouse Stories	Walt Disney
	20	Billy and Blaze	C. W. Anderson
	15	Silver Stallion	Walter Farley
	15	Fury	William Fenton
	15	Peter Pan	J. M. Barrie
Five	40	Maud and Miska Petersham Stories	Maud and Miska Petersham
	39	Marie Neurath Stories	Marie Neurath
	38	Carol Keene Mysteries	Carol Keene
	34	Enid Blyton Stories	Enid Blyton
	24	Tom Sawyer	Mark Twain
	24	The Bobbsey Twin Stories	Laura Lee Hope
	22	The Fuller Orton Mysteries	Fuller Orton
	19	Paul Bunyan	D. J. McCormick
	18	Homer Price	R. McCloskey
	16	Treasure Island	R. L. Stevenson
	15	Burgess Animal Stories	Thornton Burgess
	15	Julie Campbell Mysteries	Julie Campbell
Six	72	Carol Keene Mysteries	Carol Keene
	65	F. W. Dixon Mysteries	F. W. Dixon
	46	Enid Blyton Stories	Enid Blyton
	45	Julie Campbell Stories	Julie Campbell
	41	Donna Parker Stories	Marcia Martin
	33	Helen Wells Stories	Helen Wells
	32	Frank Beal Stories	Frank Beal
	16	F. J. Judd Mysteries	F. K. Judd
	15	Lassie Stories	D. J. Snow
	15	Silver Chief Stories	J. O'Brien
	15	Roy Rogers Stories	Parker Elton
	15	Black Stallion Stories	Walter Farley



Animal Stories rated first place in the listing of most popular writers. Although Adventure Stories rated 36.7 per cent of the reading done by Grade 6 and 24 per cent of that done by Grade 5 (Table III), the books and authors rated most popular did not reflect this: Mystery stories were favored. Series stories were likewise popular. Carol Keene, Frank W. Dixon, Marie Neurath, Enid Blyton and Thornton Burgess were favorite authors. Lazar (6) too found that series books were highly popular with boys and girls.

Of the books preferred by the pupils only six, *Paul Bunyan*, *Homer Price*, *The Lassie Stories*, *Silver Chief*, *Black Stallion* and the *Maud and Miska Petersham Stories* are included in the 2,700 titles of *Best Books for Children* (2). Of the titles which have been perennial favorites with children for generations only *Tom Sawyer*, *Peter Pan*, and *Treasure Island* reached the fifteen-choice mark. None of the titles from the Newbery Award list appeared.

### Summary

1. The pupils of Grades 4, 5 and 6 read an average of five books apiece in a three month period.
2. The upper third of the classes, determined by a reading test, read twice the number of books read by the lowest third.
3. Sex differences in reading interests appeared in Grade 4, and increased appreciably in Grades 5 and 6. In the latter grade the girls outnumbered the boys two to one in their choice of mystery books and children's stories, whereas the boys nearly reversed the score in the preference for non-fiction.

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# THE MEASUREMENT OF SENTENCE STRUCTURE OF DEAF CHILDREN

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Word order is a device used extensively in English to control the meaning of words in sentences. The difference between "the man killed the bear" and "the bear killed the man", or their subject-object relationship, depends on word order. Moreover, many words without changing their form change their functions as parts of speech depending on their location in relation to other words in the sentence, the reversal of "cold ice" to "ice cold" changing not only the modification but the parts of speech involved. Although the rules of word order in English are complex, most native Canadians have little difficulty in mastering this technique. Writing "straight" language, however, is a major problem for deaf children.

While deaf students at the Alberta School for the Deaf give their teachers daily evidence of a low level of language achievement, they were able to score at a considerably higher level on the standardized tests of language that had been in use for several years. In this test students were required to choose alternatives in word usage, to use punctuation and capitals, to differentiate between sentences and sentences fragments and to identify parts of speech, but not to construct language. Presented with a scrambled sentence, however, the student must choose his subject and predicate. If its form does not identify the function of a word, this must be decided by its relation to the rest of the sentence. This series of judgments approximates those made in writing original language. Therefore, the scrambled sentence technique is suggested as an objective means of testing the sentence construction of the deaf.

## A Review of the Research

While considerable research has been done on the intelligence of the deaf, research on achievement, especially in language, is meagre. In 1958 Goetzinger and Rousey of the University of Kansas (2), using the Wechsler Performance Scale obtained a mean I.Q. of 103.5, S.D. 13.4, on 101 deaf adolescents with a mean age of 17:2, S.D. 1.9. On the same students, using the Stanford Achievement Test (3), grade levels of 4.4 and 4.2 were obtained for Reading: Paragraph Meaning, and Reading: Word Meaning, respectively, compared to grade levels of 6.0 and 6.5 for Arithmetic Reasoning and Arithmetic Computation, respectively. Lavos in Michigan (5) found the correlation between the Pintner Test of General Ability and the Clarke



TABLE I  
THE RANK-ORDER INTERCORRELATION OF THE  
SCRAMBLED SENTENCE TESTS SCORES WITH THE  
CRITERION SCORES AND OTHER VARIABLES

	Scrambled Sentences Test X	Scrambled Sentences Tests II-III	Scrambled Sentences Tests I-IV	C. A. T. Mech. of English Subtest	Raven's Progressive Matrices	Structure Analysis of Ten Sentences	Impression of Fifty Words on Five Teachers
Scrambled Sentences ..... Test X	1.00	.94	.94	.82	.64	.82	.76
Scrambled Sentences ..... Tests II-III		1.00	.98	.79	.41	.81	.79
Scrambled Sentences ..... Tests I-IV			1.00	.79	.44	.82	.81
C. A. T. Mechanics ..... of English				1.00	.53	.65	.65
Raven's Progressive ..... Matrices					1.00	.38	.44
Structural Analysis of ..... Ten Sentences						1.00	.84
Impression of Fifty Words on Five Teachers							1.00

The Relationships of the Variables

*The Scrambled Sentences as a Measure of Language.* When the ranked scores on the Scrambled Sentences Tests were correlated with the ranked scores on the Mechanics of English and Grammar subtest of the California Achievement Tests, coefficients of .82, .78 and .79 were obtained, which were respectably high. The California subtest correlated with the subjective and objective criteria of sentence construction with coefficients of .65 and .65 as compared to a range of from .76 to .82 for various batteries of the Scrambled Sentences. All three forms of the Scrambled Sentences Tests correlate more highly with both criteria than does the California subtest, the differences being significant  $<.01$  in each case. Judged by these criteria the Scrambled Sentences are better predictors of the language achievement of the deaf than the California Mechanics of English and Grammar subtest.

*The Scrambled Sentences as a Measure of Intelligence.* All three batteries of Scrambled Sentences correlate more highly with the three measures of language skills (California Achievement Test, structural analysis of sentences and teachers' impressions) than with the measure of intelligence, the differences being significant  $<.01$  in all cases except one. This exception is the difference between the correlation of Test X and the teachers' impressions and Test X and the Progressive Matrices ( $<.05$ ). It is concluded, therefore, that the Scrambled Sentences Tests are measures of language rather than of intelligence.

Graphs of the frequency distributions of the scores on the Scrambled Sentences Tests indicate that scores on Tests I-IV most nearly approach the normal curve of probability, while the graph from Test X has a tendency to be U-shaped. The deletion of items with lower and higher difficulty indices would seem to dichotomize the pupils rather than to measure their ability. As the range of difficulty of the items narrowed toward the index of .50, the test increasingly correlated with intelligence rather than with language ability. Because the population of this study was small, no conclusion was reached on this point.

*An Evaluation of the Criteria.* The coefficients of correlation of .38 and .44 between the criteria of sentence construction and the Matrices are reasonably close to the coefficient of .53 between the California Mechanics subtest and the 1938 Matrices of the present study, and to other coefficients between language and intelligence found in other research by Coutts and Baker (1) and by Lavos (5). This would indicate that the criterion procedures were relatively valid measures of language achievement. Their inter-correlation coefficient of .84 is a measure of their reliability.

### Criterion Composition

#### Samples of Fifty Words Which Rated High, Average and Low

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*Rating of 20 points.* Bill ran and hunted with a pack of coyotes. He knew everything that the coyotes did. He bayed at the moon with the coyotes. He thought he was a coyote, too. One day Bill crawled along the plains. A cowboy named Chuck was riding over the plain. —J.B.

*Rating of 10 points.* Mother and father coyotes helped him on a back. They did know everything he did. They ran and hunted to the ranch. Some animal could talked to Pecos Bill never hurt with them. Some coyote taught him how to talk. The coyote loved the child like a brother. —N.S.



Rating of 0 points. Bill said, "I like the stars." Bill and Chuck when too far away. Chuck called, "The little boy come out of them." Chuck told the boy he said, "Chuck found and saw the little boy." The boy told Bill up dressed cowboy, that is Pecos Bill.  
—R.T.

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# A STUDY OF THE SPELLING ACHIEVEMENT OF RURAL HIGH SCHOOL PUPILS

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## Purpose of the Study

A popular belief today is that our high school students cannot spell. Business men deplore the fact that their employees misspell the simplest words; editors use the theme for numerous editorials. All state categorically that the high schools are to blame for turning out pupils who cannot spell. Even the teachers themselves complain of the numerous mistakes found in students' written assignments and are the first to admit that their pupils are not able to spell consistently well.

Are these complaints justified? It is generally conceded that they are. Mere opinion, however, is not enough. What is necessary is quantitative proof of the assertion. Some work has been done to measure spelling ability in the high school grades and in nearly every case the same conclusion is reached; that spelling ability is low at all levels, elementary, high school, and college.

Spelling as a formal subject is taught to the end of grade eight; thereafter any teaching of spelling is done incidentally. How many of the words that the student has been taught in the elementary grades are among the words misspelled in the high school grades? The test was designed to answer this question first.

Some of the related questions that need an answer deal with the achievement of bilingual students compared to that of students who come from homes where only English is spoken. It is common practice to blame under-achievement in spelling and other language skills on the fact that English is not spoken at home by the students and their parents. Is this an important factor in the spelling ability of bilingual students?

Several studies have shown that boys do not spell as well as girls of the same age. The usual explanation given is that girls mature earlier than boys and as a result their skill in spelling is greater. Is this still true in the later grades of high school when both girls and boys have reached maturity?

Another reason advanced for difference in spelling ability is the socio-economic factor, or the effect of environment. Illiteracy is sometimes considered as a correlate of low socio-economic status. In the rural areas the population falls quite naturally into four general groups, determined by the father's occupation rather than financial



competence. These four groups are: farmers, proprietors of small businesses, unskilled workers and professional type. Does the different home environment, or different attitudes of these four groups significantly affect the children's spelling ability? Dockrell (3) states in the study "The Relationship Between Socio-Economic Status, Intelligence, and Attainment in Some Scottish Primary Schools" that "When the I.Q. is held constant there is significant correlation between E.Q. (English Quotient) and socio-economic status." Since spelling is a factor in English achievement, it might be expected that a difference in spelling achievement will be revealed between the children from families of different economic status.

Various studies have been made of spelling errors found in both tests and written work. Later studies have shown that words change in difficulty as the student grows older. What are the words that high school students most frequently misspell? Do these words change as the student matures? Furthermore, what is the underlying reason why some students are weak in spelling? Some of the investigators have suggested that an indifferent attitude, laziness, carelessness and poor handwriting all contribute their share. An analysis of the gross data of this study was undertaken to attempt to answer some of these questions with reference to rural high school students.

### Review of Related Studies

A survey of related literature reveals that there are two broad fields of investigation, one in which the researchers are measuring ability at various levels of the school population and the other in which spelling errors are analysed and reasons for misspelling are sought. The basic reference for spelling research is the section on "Spelling" by Ernest Horn in the *Encyclopedia of Educational Research*.

In 1948 Oliver Harris (8) investigated spelling achievement of 1,235 pupils in grades seven to twelve inclusive in a Pennsylvania high school by using a dictation type test of 195 words selected from a graded word list ranging from grade two level through high school. He found individual spelling achievement ranged from grade two to a substantial high school level, while the average achievement was low, four grades below the actual grade. He found that systematic study tended to accelerate progress in spelling achievement.

In 1951 Doris Hageman (7) and H. R. Laslett undertook a similar study of the spelling ability of 204 high school students divided among the four high school grades. The 320 words of this test were selected from words widely used in speech and writing. The mean of misspelled words was eighty, or twenty-five per cent, with a range

of two to 275 misspelled words. These investigators cite carelessness and laziness as probably the most common cause of spelling weakness, "... especially among poor spellers with high I.Q."

Another type of investigation was that of Dorothy Knoell and Chester Harris (9) who attempted to find out by factor analysis if spelling is a single ability. They found that there appears to be a general spelling ability factor which is measured by most tests.

Robert Coard (2) asked two classes of forty college freshmen to analyse the cause of their misspellings. It is surprising to find indifference was the most common reason given by these students for their errors. Carelessness, indifferent and incompetent teachers, poor pronunciation, and confusion of common words follow in that order.

Dwight L. Burton (1) experimented in teaching spelling by three different methods to three grade twelve classes, matched in intelligence and in the ability to spell as tested by a special spelling test. Each class was taught spelling by a different method for three months. Class A used the 5-step plan of Fitzgerald (4) to learn thirty words a week, with a weekly test. Class B studied one spelling rule a week with occasional weekly periods used for testing and review. Class C studied spelling "incidentally" by keeping and learning individual lists of troublesome words. When the second test was given after three months, the results showed no statistical difference for any of the three methods. The Class A method final mean score was significantly better than the mean score on the first test, but the other two groups failed to reach this level of significance though there was marked improvement. Burton concluded that this study indicated the benefits of systematic instruction in spelling.

What of the part phonetics play in teaching spelling? Ernest Horn (10) concluded that there is no escape from direct teaching of common words that do not conform to any rules. For every phonetic rule there are dozens of words that are exceptions; how can a rule be formulated that is of any assistance to the school child? Sister Roberta Wolff (13) found when studying spelling errors, that phonetic errors made up but 36.3 per cent of the whole, while 41 per cent were non-phonetic in origin and mechanical errors made up the remaining 27.7 per cent.

How do the students of today compare with those of a generation ago? Calvin C. Sifferd (11) conducted a survey by using the Buckingham Extension of the Ayres Spelling Test first given thirty years ago and measuring spelling ability against the norms. He found that only in the case of grade seven girls were the marks of thirty years ago surpassed by today's students.



## Design of the Problem

### *Description of the sample*

Three school divisions, Calgary, Three Hills, and Wheatland, provided the pupils for the survey. The total high school population of this area, including grade nine, was approximately thirteen hundred.

Twenty-one schools participated, yielding a total of 568 pupils. Sickness and other reasons prevented forty-three of these from completing the test, leaving a final sample of 525 students. Of these, 203 were in grade nine, 140 in grade ten, 104 in grade eleven, and 78 in grade twelve.

This cannot be called a truly random sample; it is rather an incidental sample, yet it is forty per cent of the total high school population of these three school divisions. The schools are typical rural schools, situated in a small town, village, or community, the pupils coming from the surrounding farming areas. Four of the schools offer instruction to grade nine, two offer instruction to grade ten, three to grade eleven, and the remainder offer the complete high school programme.

### *Construction of the Test*

This was a dictation type test, since the use of the word in context is the functional approach to spelling. Four hundred words were selected by random sampling from the elementary school spellers; an equal number from the spellers used in grades two to five, from the spellers used in grade six, from the grade seven speller, from the grade eight speller, and from the list of "demons" listed in the grade eight speller. Words with alternate spellings, and unusual or trick words were not included. A mistake in typing the test caused the omission of two words; the final test consisted of 398 words.

Each of the words was put into a simple sentence that would make the meaning clear. Explicit instructions were given so that the administration of the test was as uniform as possible. The teacher was asked to read the word, then the sentence, and repeat the word to be spelled once more. He was allowed to give any information that would make the procedure clear, but was not allowed to give any information that would help in the spelling of the word. It was suggested that the test be given in units of one hundred words.

### *The Data Sheet*

To obtain the necessary information required in the sub-problems dealing with sex, bilingualism, and socio-economic status, the student filled out a data sheet to be attached to his paper. The teacher was asked for the I.Q. of each student, but this item proved useless,

as in many cases no I.Q. was available and in others it was an estimated I.Q. or the I.Q. resulting from a variety of tests.

### *Scoring the Test*

The tests were marked by the investigator. The student was given the benefit of the doubt in the case of poor handwriting. In the matter of capitals, if the word demanded a capital, it was required. Although the test was designed to exclude words with alternate spellings, it was pointed out by the teachers that words such as "skillful," "jewellery", and "sulphur" although having no alternates in the spellers, do have alternative spellings in the *Thorndike-Barnhart Dictionary* and so both were accepted as correct.

### *Purpose and Use of Data*

The number of errors constituted the student's score. These scores were arranged in five frequency distributions; one for the group as a whole and one for each grade. From these distributions achievement was expressed in terms of mean scores and standard deviations. Ten frequency distributions were arranged on the basis of bilingualism or unilingualism and grade; ten by dividing the total group and by grade on a sex basis; and four by separating the pupils into four socio-economic groups. In each case the significance of the difference of the means was ascertained by assuming the Null Hypothesis and referring the critical ratio to Fisher's "t" from Table D in Garrett (6). The variances were tested for homogeneity by use of the variance ratio and Table F in Garrett. In cases where it was found that the difference in means could have arisen from a difference in samples the Cochran and Cox test was used to determine if the difference in means was truly significant.

### *Analysis of Gross Data*

This was done by taking 130 test papers from three high schools, in alphabetical order, and comprising twenty-five per cent of the entire group. The frequency of error of each of the 398 words in the test was determined by actual count. These frequencies were broken down into the errors made by each of the four grades and expressed as percentages of grade population. The total frequency of error was expressed as a percentage of the entire group.

The third part of the study was an analysis of kinds of error made in the ten most frequently misspelled words, in an attempt to find out how students misspell.

### **The Error Frequency of the Test Words**

An analysis of the sample of 130 test papers referred to in the last paragraph revealed that there are many high school students who have not retained the ability to spell the simple words they have



been taught in grade two. The words in group four, those chosen from the grade eight speller, seemed to give the most difficulty, followed closely by the group five list of “demons”. Twenty-one per cent could not spell “mathematics” which word they must see every school day on the cover of the text book. With the exception of two words, the words with the highest error frequency are to be found in Furness’ list of 231 high school “demons”, and those with the lowest error frequency are to be found in Fitzgerald’s list of 222 elementary school “demons”. This supports Sifferd’s (11) assertion that words change in order of difficulty through the years.

In examining the performance of the total group from the frequency distribution of spelling errors given in Table I it can be

TABLE I

FREQUENCY DISTRIBUTION OF SPELLING ERRORS  
MADE BY 525 HIGH SCHOOL PUPILS ON SPELLING TEST  
OF 398 WORDS

Number of Errors Class Interval = 15	Grade 9 f	Grade 10 f	Grade 11 f	Grade 12 f	Total Sample f
1 to 14 .....	38	38	25	25	126
15 to 29 .....	31	40	24	26	121
30 to 44 .....	40	22	16	12	90
45 to 59 .....	23	10	15	4	52
60 to 74 .....	12	13	10	6	41
75 to 89 .....	19	8	5	2	34
90 to 104 .....	13	3	3	1	20
105 to 119 .....	7	2	2	0	11
120 to 134 .....	8	1	2	0	11
135 to 149 .....	2	0	1	1	4
150 to 164 .....	2	0	0	0	2
165 to 179 .....	0	1	0	0	1
180 to 194 .....	1	0	0	0	1
195 to 209 .....	0	1	0	0	1
210 to 224 .....	1	0	0	0	1
225 to 239 .....	2	0	1	0	3
240 to 254 .....	2	0	0	0	2
255 to 269 .....	1	1	0	1	3
270 to 284 .....	1	0	0	0	1
N = .....	203	140	104	78	525

seen that the first three class intervals have by far the largest frequencies. After this they decrease in value very rapidly. What is not revealed by the table is that no student made a perfect score and only one student had but one error. The mean error score for

the entire sample was 44.94, ranging from 56.88 for grade nine to 31.60 for grade twelve. In all cases the standard deviations are large, indicating a wide range of spelling abilities in the individuals comprising the sample. Expressed in terms of percentiles the frequency of errors revealed that the ninety percentile score is five, or ten per cent of the entire group have fewer than five errors. The ten percentile score is ninety-five, or the lowest ten per cent have more than ninety-five errors.

This was the frequency distribution of the errors of the total group and by grades, and gives a quantitative picture of the achievement of the high school pupils in spelling words they have been taught. The answers to the related questions asked in the problem were then found by separating the scores according to sex, grade, bilingualism, and socio-economic status, and making the frequency distributions for the purpose of estimating significance or otherwise of the differences of the means.

### Summary of Findings

1. *Rural High School Students Are Poor Spellers.* Since this test was designed to measure the ability of rural high school students to spell words that they had studied, it seemed proper to expect a reasonably high level of proficiency. It was found instead that the level of attainment was surprisingly low, only fifty-nine per cent were able to spell ninety per cent of the test words correctly.

2. *Spelling Ability Improves Through the High School Grades.* There was gradual improvement in spelling ability from grade nine to grade twelve. We find that fifteen per cent of the grade twelve students failed to achieve as well as the average for grade nine; twenty-seven per cent of the grade eleven students failed to reach this level, and twenty-one per cent of the grade ten students made more mistakes than the average grade nine student.

3. *Girls Are Better Spellers than Boys in the Early High School Grades.* In grade nine, girls were significantly better than boys in spelling. In grades ten and eleven, the difference is less, but the superiority of the girls is statistically significant. In grade twelve the difference is slight and no longer significant.

4. *The Bilingual Students are Better Spellers in the Early High School Grades.* There is evidently no valid reason for the language teacher to blame bilingualism for poor results in spelling. In grade nine the bilingual students are significantly better spellers. In the other grades the observed difference is in favour of the bilingual groups, but the small samples in grades ten, eleven, and twelve, make the comparison meaningless. In this study the samples were com-



posed of mixed groups of boys and girls; it would be interesting to carry out a similar study with samples of bilingual boys or girls compared to similar samples of unilingual boys or girls. The sex factor no doubt affects the results of the present study, but the samples were too small to allow separating the sexes. The socio-economic factor is doubtless also active in the spelling achievement of these bilingual students, as a large proportion of them were children of unskilled workers or farmers.

5. *The Socio-Economics Factor is Important in Determining Spelling Ability.* When the students were grouped according to socio-economic status, the children of the professional workers had the lowest mean score, followed by the children of the small proprietors, the children of the unskilled workers and lastly the farmers. The very small sample of the professional group, sixteen, tended somewhat to invalidate the results for this group. When we test the significance of the difference of the means of the four groups, the only significant difference was between the farmer and the small proprietor groups, and in favour of the latter.

6. There is little difference in the kind of words misspelled by any of the grades. The types of error made are chiefly those of omission and phonetic substitution, with errors due to doubling and mispronunciation following in close order.

### Implications for the Classroom Teacher

A favorable attitude to accuracy in spelling must be established in the mind of the student before any remedial work can be done. Spache (12) says that the school must try to develop a spelling "conscience", a desire to spell correctly; and a spelling "consciousness", a critical attitude to one's own spelling. The second essential will be continuous emphasis on correct spelling at all times. Not only the language teacher, but all the high school teachers must require correct spelling from the students in all written work.

Formal teaching of spelling has its place, but the learning of rules and long lists of words has proved futile in the past as many authorities believe. A variable approach to the teaching of spelling will provide the best results. Students should be encouraged to seek out their own weaknesses and remedy them. The fact that "demon" lists contain relatively few words should suggest the mastery of a core vocabulary of these basic words.

Poor handwriting encourages poor spelling, and the student should be encouraged to write neatly and legibly. The high error scores in the study were without exception found on badly written tests papers.

The third essential to successful spelling achievement is continuous evaluation. It is desirable that the student learn to evaluate his own spelling. Skill in proof reading is valuable to this end. Standardized tests have some value in establishing norms, but more valuable are tests composed of the words used and learned in the classroom, and practised in the written work of the student.

These three items, a favorable attitude, a continuous emphasis on correct spelling with a variable approach, and continuous evaluation will assist the teacher in improving the spelling ability of his students. Because spelling ability is not highly correlated with intelligence, there is no reason why every high school student should not spell correctly.

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# THE STANDARD PROGRESSIVE MATRICES AS A CULTURE-REDUCED MEASURE OF GENERAL INTELLECTUAL ABILITY

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## **The Problem**

Teachers and counsellors frequently require an estimate of a pupil's potential intellectual ability which is as free as possible from the restrictions of an unfamiliar language or cultural context. Numerous studies in recent years have demonstrated what Binet (2) originally suspected—that the conventional verbal test of intelligence, which samples through the medium of a specific language and a set of cultural concepts more familiar to some than to others, discriminates against children who are not products of an urban middle-class culture.

Logically these findings point to the need both for greater caution in the interpretation of intelligence test results, and for the construction or identification of tests which tap important aspects of ability through a medium which is relatively independent of specific acquired knowledge. In the latter connection MacArthur (13) has shown that Raven's Coloured Progressive Matrices is a very promising instrument when used with a sample of Edmonton Grade III boys. This present paper reports, for a representative sample of Edmonton Grade VII pupils, a study of the nature of abilities measured by Raven's Standard Progressive Matrices, and its relation to socioeconomic status as compared with that of certain commonly-used group tests of intelligence. Some implications for teachers and administrators will also be considered.

## **Rationale**

Research studies described by Eells, et al (7) and Havighurst, et al (10) (11) demonstrate that mental tests vary significantly in the degree to which they differentiate between social classes in the community—that there is wide variation in the extent of cultural loading in currently-used tests. Tests of vocabulary and verbal reasoning are typically the most culturally weighted, but under what might be called the relatively fixed treatment of ordinary North American curricula they are also the best predictors of school success for the majority of pupils. However, for children who are unable to reveal their intellectual potential on verbal tests because of previous cultural and/or educational background such tests are

less useful as predictors, particularly when there is opportunity for such pupils to make good their verbal deficiencies through remedial work or a change of environment. Current emphasis on the identification of talented pupils from underprivileged backgrounds suggests the immediate practical use to which culture-reduced measures of intellectual ability may be put locally in the mental assessment of urban pupils of lower socioeconomic status, and of immigrant, Indian, Metis, and isolated rural children.

It was hypothesized that Raven's Standard Progressive Matrices would be a more suitable measuring instrument for these purposes than tests currently used as routine measures of intelligence in Edmonton schools. To investigate this hypothesis evidence was obtained on the extent to which the Standard Progressive Matrices met the following criteria: (a) demonstrates a minimum of cultural or educational loading; (b) samples a comprehensive and important aspect of general intelligence; (c) shows a moderately high relationship with school success; (d) shows a high degree of reliability; (e) is easy to administer and interpret.

(a) *Minimum cultural or educational loading.* A useful indication of cultural loading of a test can be provided by correlating the test results with measures of socioeconomic status. Items or tests which depend heavily on the richness of the verbal and educational stimulation received from a home where good books and cultured conversation abound may be expected to show high correlations with socioeconomic status. Conversely, a useful culture-reduced test should show relatively low correlations with socioeconomic status. It was hypothesized that Progressive Matrices would show lower correlation with socioeconomic status than do currently-used verbal tests of intelligence.

(b) *Importance of abilities sampled.* Havighurst (10) (11) has demonstrated that tests of spatial ability show little cultural loading, but they can scarcely be useful for assessing intellectual potential because of their specificity and lack of relation to academic success. Consequently it was necessary to examine whether the test in question can be considered as sampling a broad aspect of general intelligence common to a wide variety of mental abilities. The method of factor analysis is useful in this connection; to the extent that a test shows high loading on a general factor (g) common to many tests of ability, it satisfies the second criterion. It was hypothesized that Progressive Matrices would have a g loading at least as high as those of the currently-used verbal tests of intelligence.

(c) *Relationship with school success.* A culture-reduced test may not be expected to show very high correlations with school grades, since the latter are themselves weighted by language and



cultural bias. Pupils handicapped on verbal intelligence tests would likewise be expected to display less talent on verbal achievement tests. Nevertheless correlations between the culture-reduced intelligence test and schools marks should be positive and moderately high.

(d) *Reliability*. An important criterion for evaluating any test is the consistency with which it measures. Ability tests for use at the junior high school level should have reliability coefficients close to 0.90.

(e) *Usability*. Such practical considerations as the time required, the training needed to administer the test, pupil interest, and ease of interpretation of results also bear on the extent to which a test is useful in the classroom.

### Description of the Test

The Standard Progressive Matrices Test (1956) is a slightly revised version of a test devised by Raven in 1938. Although it has been used extensively in Britain for military and educational purposes, its use on this continent has been relatively limited. It is a non-verbal test composed of sixty items classified into five sets of twelve, each set being relatively homogeneous in the nature of the principles required in solution. The first problem of each set is easy enough to be self-explanatory, and the progressive increase in difficulty within each set makes the instrument a tester of what it teaches. This characteristic gives the test a certain face validity as a means of measuring learning potential when past acquisitions are held to a minimum.

Most items consist of a matrix or pattern of nine figures, one of which is omitted. The task of the examinee is to choose from six or eight given figures the one which best completes the pattern. This requires the subject first to ascertain the principles underlying the pattern of the main figure, and then to select a completion on the basis of these principles. The two mental processes involved (educing relations and correlates) seem to exemplify, in non-verbal form, the essential characteristics of Spearman's *g*, while the factor analytic studies which have been performed with the test have tended to confirm this view.

Burke (5) reports that Raven, Vernon, Emmett, Nisbet and Banks have all reported *g* loadings above 0.78, while American investigators who rotated so as to eliminate a *g* factor gave the test high loadings on an Inductive or Reasoning factor (17). Apart from an occasional small loading on a spatial factor (18) the Progressive Matrices has not been shown to measure any other group factor of ability.

Reported reliability coefficients differ according to the age and ability of the samples tested and the method of calculation, but typical coefficients for children of junior high school age vary between 0.85 and 0.90. For 120 thirteen-year-old children Raven (16) obtained a re-test reliability coefficient of 0.88. Burks and Sinha, as reported in Burke (5) found an average reliability coefficient of 0.88 when computed by three different methods on a sample of 310 children aged eight to thirteen years.

The potential usefulness of the Matrices can be further seen in cross-cultural researches by Rimoldi (17) and Tuddenham (19), who demonstrated that Argentine and United States children yielded norms similar to those of Raven's Scottish standardization samples. Within a given cultural group correlations with conventional intelligence tests have been reported as 0.86 with the Stanford-Binet for 150 children aged six to thirteen years (16), 0.75 with the Wechsler Intelligence Scale for Children for 70 nine and ten-year olds (1), and 0.80 with the Arthur Performance Scale for 23 non-English immigrants to United States (4). On the other hand the mean correlation coefficient with five tests of spatial ability on different samples was less than 0.4 (5). Such results suggest that the Progressive Matrices does sample a comprehensive aspect of intelligence, despite the seemingly specifically perceptual nature of its items.

With educational achievement and verbal group tests of intelligence (both culturally weighted), correlation coefficients are understandably lower. For nine studies listed by Burke (5) the mean correlation with such subjects as arithmetic and English was 0.48. With Intelligence Quotients from verbal groups tests the coefficients typically cluster around 0.5.

The above review suggests that the Standard Progressive Matrices should be useful as a culture-reduced test in situations where Alberta teachers wish to determine the intellectual potential of culturally-handicapped pupils, in order to adapt instruction so as to best realize that potential .(14)

### Collection of Data

*Sample.* After discussion with Edmonton Public School Board officials three city schools were selected for the testing program for this investigation. Since it was desired to choose a sample typical of the Edmonton Grade VII population consideration was given to such factors as academic averages, socioeconomic representation, residential mobility, geographic location, and school type.

To estimate the degree to which the 271 pupils retained in the final sample could in fact be regarded as representative of the then-



current Edmonton Grade VII population, this sample was compared on age, I.Q. (Laycock Mental Ability Test), parental occupation (Blishen Index), and sex, with a random sample of 432 pupils chosen from the 3,600 Edmonton Grade VI pupils who had participated in a city-wide testing program the previous year. This comparison is presented in Table I. Since none of the observed differences between the two samples is significant, the reader is able to generalize the results of this study with a considerable degree of confidence to the population of Grade VII pupils in the schools of the Edmonton Public School Board.

TABLE I  
COMPARISON OF GRADE VII SAMPLE WITH RANDOM  
GRADE VI SAMPLE OF PREVIOUS YEAR FROM  
EDMONTON POPULATION

Basis of Comparison		Sample Gr. VII	Sample Gr. VI	Diff.	t	Signif.	F	Signif.
N		271	432					
Age	Mean	144.73*	144.71	0.02	0.04	N.S.	1.11	N.S.
	S.D.	6.62	6.99					
I.Q.	Mean	111.64	110.41	1.23	1.18	N.S.	1.05	N.S.
	S.D.	13.24	13.57					
Occupation	Mean	52.84	51.63	1.21	1.59	N.S.	1.17	N.S.
	S.D.	10.09	9.35					
Sex	Boys	46.1%	50.0%	3.9%	1.30	N.S.		
	Girls	53.9%	50.0%	3.9%	1.30	N.S.		

\*Reduced by 12 months.

*Measures.* In May, 1960, the Standard Progressive Matrices was administered with a forty-five minute time limit to all Grade VII classes of the three schools in the sample. Most pupils finished the test in less than thirty-five minutes but extra time was allowed to emphasize the power as opposed to any speed aspect of the test. During the same period the following tests also were administered: IPAT Cattell Test of "g" Scale 2, Lorge-Thorndike Non-Verbal Intelligence Test Level 4, Holzinger-Crowder Uni-Factor Test, and California Short Form Test of Mental Maturity, Elementary.

A questionnaire seeking detailed information on parental occupation and socioeconomic status was administered as well. This latter Home Index scale was similar to one devised by Gough (9); it was adapted for Edmonton conditions after item analysis made on the

basis of results from a pilot study. An occupational score for each pupil was obtained by converting each parental occupation to a scaled score on an index constructed by Blishen (3) from Canadian census data. The correlation between raw score on the Home Index scale and the Occupational Index was 0.61, and since the pattern of correlations between these two indices and twenty-nine other variables examined was very similar ( $\rho = 0.87$ ) it was assumed that the two measures of socioeconomic status were tapping highly similar correlates of mental ability. The results of a factor analysis subsequently substantiated this assumption. Accordingly the two scales were combined with equal weights, and the resulting score regarded as a single measure of socioeconomic status.

Additional measures used included scores on the Laycock Mental Ability Test and the California Achievement Battery Junior High, obtained one year previously, and school marks in basic subjects in Grade VII.

The relevant data were recorded on tape and processed on the L.G.P. 30 electronic computer.

Results

The Standard Progressive Matrices were examined with reference to each of the five criteria previously outlined.

(a) The extent of cultural loading was investigated by comparing the product-moment correlation between Progressive Matrices and

TABLE II  
CORRELATION WITH SOCIOECONOMIC STATUS AND  
SIGNIFICANCE OF DIFFERENCE IN CORRELATION FOR  
PROGRESSIVE MATRICES AND VERBAL TESTS

Test	r with Socioec. St.	Sign. of Diff. from r for Prog. Mat.	
		t	Signif.
Prog. Mat. ....	.23		
CTMM Lang. ....	.41	3.27	Sig. .01
CTMM Total ....	.38	3.07	Sig. .01
CTMM Verbal ....	.38	2.39	Sig. .05
Calif. Rdg. Total ....	.36	2.12	Sig. .05
Laycock ....	.35	2.22	Sig. .05

socioeconomics status with that of the conventional verbal tests administered, using a formula given by McNemar (15) for the situation where two variables are correlated with a common third variable on the same sample. Table II shows the results of this analysis.



The prediction that correlation with socioeconomic status would be lower for Progressive Matrices than for the verbal tests was supported by the differences significant at the .05 level in all instances. (NOTE. Since this paper is focussing on the Standard Progressive Matrices, data for the other culture-reduced tests are not reported here; the interested reader is referred to Elley (8).)

It might be argued that a really "culture-fair" test should have zero correlation with socioeconomic status. However, it has been assumed in this investigation that the combined effects of heredity and early environment, coupled with the cultural influences that operate in any booklet testing situation are sufficient to produce some superiority for children from the upper and middle classes. The significant differences in relationship merely indicates that the discrimination on the basis of socioeconomic status is less marked for the Progressive Matrices. Moreover, Hebb's contention (12) that even the most elementary patterns of perceptual phenomena are learned appears to make the possibility of constructing a test whose media are equally familiar for different cultures somewhat remote.

The lack of loading of Progressive Matrices on either the v:ed or the n factors in Table III provides further evidence of an approach to minimum educational loading for this test.

(b) The extent of meeting the criterion of generality of the abilities sampled by Progressive Matrices was examined by performing a principal components factor analysis on the intercor-

TABLE III  
ROTATED FACTOR MATRIX: II-TEST BATTERY  
(Loadings below .20 omitted)

Test	I g	II v:ed	III n	h <sup>2</sup>
1. Prog. Mat. ....	.78	.....	.....	.63
2. Cattell .....	.79	.....	.....	.64
3. L-Th. N. V. Total .....	.74	.....	.31	.68
4. H-C. Fig. Chge. ....	.52	.....	.26	.37
5. H-C. Series .....	.40	.34	.53	.56
6. CTMM Non-Lang. ....	.62	.....	.35	.52
7. CTMM Lang. ....	.58	.62	.....	.72
8. Laycock .....	.63	.57	.....	.73
9. Calif. Rdg. Total .....	.44	.78	.....	.82
10. Calif. Arith. Total .....	.43	.51	.34	.56
11. Calif. Eng. Total .....	.36	.70	.....	.65
Prop. Common Variance .....	.56	.33	.11	1.00
Prop. Total Variance .....	.35	.21	.07	.63

relations of the eleven total tests for which scores were obtained. After appropriate iteration for improvement of communality estimates, three significant factors were extracted, and orthogonal rotations were made to maximize the general factor while maintaining a positive mainfold on the group factors. A psychologically compelling solution was obtained after three rotations, and the resulting factors were identified as general intellectual ability *g*, a verbal-educational factor *v:ed*, and a numerical ability factor *n*. The rotated factor matrix is reported in Table III.

Of the culture-reduced tests in the battery Progressive Matrices and the Cattell test best meet the criterion of high loading on a general factor with no loading on group factors, a finding which is supported by many other studies (5) (6). The remaining non-verbal tests show lower loadings on the general factor, and loadings on one or more of the group factors.

Despite the seeming specificity of the function measured, it can be concluded that the Standard Progressive Matrices is sampling a broad aspect of ability common to a wide variety of intelligence and achievement tests.

(c) Relationships with school achievement were investigated by correlating Progressive Matrices with results from teacher-made and standardized tests. This type of "cold-blooded" predictive validity is a less suitable evaluative standard for this investigation since the criterion of school achievement is also culturally weighted. Only when special remedial treatment had been carried out or cultural differences held constant would predictive or concurrent validity in terms of school marks be crucial. However, the effects of cultural weighting are not so great that a culture-reduced test is relieved of the necessity for showing a reasonably high relationship with school marks, which do reflect some measure of intelligence.

The school mark used as a criterion was the average of those recorded on end-of-year report cards in Grade VII, based on equal weights for reading, literature, language, social studies, science, mathematics, art, music, health and personal development, and industrial arts or home economics. Since somewhat different bases were used for calculating end-of-year marks for the various classes, correlations were calculated for the thirteen classes separately, and median correlations are reported here. Selected intelligence test scores were also correlated with the scores on the California Reading, Arithmetic, and English tests administered twelve months previously. Results are reported in Table IV.

As anticipated Table IV indicates some superiority for the culturally-weighted verbal tests in predicting school marks and achievement test scores, which themselves, under the relatively fixed treat-



TABLE IV  
CORRELATION OF SELECTED INTELLIGENCE TESTS  
WITH SCHOOL MARKS AND ACHIEVEMENT TESTS

	School Mks.	Calif. Rdg.	Calif. Arith.	Calif. Eng.
Prog. Mat. ....	.56	.43	.44	.38
CTMM Lang. ....	.67	.77	.56	.62
CTMM Total ....	.66	.72	.60	.61
Laycock ....	.59	.71	.55	.64

ment of ordinary curricula, can be expected to reflect cultural influence. But it can be concluded that Progressive Matrices shows a sufficiently high relationship with school marks to indicate that it samples an important aspect of the ability to do well at school.

(d) Further evidence on the reliability of Progressive Matrices was obtained in the form of a split-half reliability coefficient of 0.91 and a Kuder-Richardson coefficient of 0.83, over the 271 cases of this sample. The median value of 0.87 is close to that reported in similar studies; it can be noted that this sample was relatively homogeneous.

(e) One of the advantages of Progressive Matrices is the ease with which it can be administered to groups. The low difficulty level of the first items greatly simplifies the few manual directions, and some success has been achieved in administering the Coloured form without verbal instructions. The unusual nature of the tests and the intrinsic appeal of the problems makes test motivation an easy task, while the lack of time limit removes another possible source of error in administration. Of the tests administered in this study, Progressive Matrices attracted the most interest among pupils and teachers.

Scoring of the tests is easily performed by means of a strip key. The percentile norms provided by Raven are based on a sample of 1,400 Scottish children, and it may be questioned whether they are appropriate for their Canadian counterparts. Raven's percentile norms for thirteen-year-olds are similar to the scores of the Edmonton sample in the upper fifty per cent, but discrepancies become more marked in the lower score ranges. The comparative studies of Rimoldi and Tuddenham, cited earlier, suggest that the manual norms are useful, if not exact, for other national groups. There is an apparent need for a normative study on a representative Canadian sample in order to increase the utility of the test.

(f) Valuable information concerning the comparative longer-term stability and predictive validity of Progressive Matrices and the

California Test of Mental Maturity was provided by the records of the 243 cases from this Grade VII sample who had taken earlier versions of these two tests in 1956, when these pupils were in Grade III. Table V suggests that in stability and long-term prediction of school marks, Progressive Matrices is at least as good as the California Test of Mental Maturity.

TABLE V  
CORRELATIONS OF TESTS ADMINISTERED IN 1956 WITH  
SCHOOL MARKS AND LATER VERSIONS OF THESE  
TESTS ADMINISTERED IN 1960  
(N =243)

Gr. III—1956	Gr. VII—1960				
	Schl. Mks.	Prog. Mat.	CTMM Lang.	CTMM Total	CTMM Verbal
Prog. Mat .....	.35	.55			
CTMM Lang. ....	.31		.49		
CTMM Total .....	.39			.47	
CTMM Verbal .....	.19				.22

Summary, Conclusions, and Implications

This paper examines, for a representative sample of 271 Edmon-  
ton Grade VII pupils, the extent to which the Standard Progressive  
Matrices meets several criteria established for a culture-reduced test  
of general intellectual ability. It was found that the Standard Pro-  
gressive Matrices:

- (a) had significantly less correlation with socioeconomic status  
than did the conventional verbal intelligence tests with which  
it was compared;
- (b) had a high loading of 0.78 on the general intellectual ability  
factor and no loading on the group factors emerging from  
a factor analysis of a battery of ability tests;
- (c) had moderate relationship with school marks and school  
achievement;
- (d) had a reliability coefficient of 0.87;
- (e) was interesting and easily usable as a group test, although  
Canadian norms would be desirable;
- (f) over the four-year period from Grade III to Grade VII was as  
stable and as predictive of school marks as was the California  
Test of Mental Maturity.



The foregoing evidence strongly indicates that the Standard Progressive Matrices can make a very useful contribution to the better understanding of the abilities of urban junior high school pupils from lower socioeconomic strata, who may be unable to adequately demonstrate their intellectual potential on conventional verbal tests of intelligence. It also indicates a need for establishing Canadian norms for this test, and pending such action, for the establishment of norms for local areas.

Further investigation of this test as a measure of general intellectual ability having minimum cultural loading for such groups as those with foreign language background, rural children, poor readers, Indians, and Metis, is warranted. Several such studies are under way and will be reported at a later date.

On the basis of the present studies, the Standard Progressive Matrices can be recommended as likely to be most useful to teachers, counsellors, and administrators in the following specific situations:

- (1) Identification of talented pupils from underprivileged backgrounds, predominately slum areas, isolated rural districts, and situations where a child has had little formal schooling.
- (2) Classification of pupils who, because of foreign language background, are not able to demonstrate their best on a verbal test.
- (3) Diagnosis of difficulties in basic tool subjects in helping to determine whether retardation can be attributed primarily to mental defect or to some correctable handicap of a sensory, emotional, or environmental nature.
- (4) Obtaining more accurate levels of expectation for the school achievement of pupils who are handicapped on conventional verbal intelligence tests.

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## BOOK REVIEW

*Studies in Spelling* The Scottish Council for Research in Education. London, University of London Press Ltd. 1961.

The Scottish Council for Research in Education have complemented their previous publications in the basic subjects of the elementary school, *Studies in Arithmetic* and *Studies in Reading*, with a volume *Studies in Spelling*. The panel which investigated problems of teaching spelling was first confronted with the question, "what are the words which children in the primary school should be able to spell?" A spelling list for Scottish children based on their needs and interests was obtained from the analysis of 69,740 compositions on a variety of topics from a representative sampling of Scottish school children aged seven to twelve. This list has been published separately as *The Scottish Pupil's Spelling Book*, and the main purpose of the current volume is to explain the method by which the compositions were obtained and the list derived.

Much of the criticism levelled against many investigations of this type has been that either the topics or sampling have circumscribed the words used by the children. The panel attempted to overcome this by having sixty-eight topics covering many aspects of child experience, including physical, intellectual, aesthetic, recreational, vocational, and a general category of extra-curricular activities. In attempting to allocate words used to particular class (grade) levels, it was essential to ascertain the comparative popularity of the topics at each level. An index of popularity was derived for this purpose. Criteria for selection of words were categorized, the main criterion being frequency of misspelling at a particular class level.

There has been a plethora of research in spelling almost equal to that in the field of reading. In this volume the research in spelling is reviewed under four headings:

- (1) Spelling vocabulary—the discovery of words most commonly used in writing.
- (2) Grading of vocabulary—determination of the content, arrangement and sequence of the spelling tasks among the several class levels.
- (3) Development of better instruments for the measurement of spelling ability and diagnosis of errors.
- (4) The teaching of spelling.

One aspect of the problem of teaching spelling which is frequently overlooked, and is ignored in this overview, is the nature

of the perceptual task involved and type of associative learning necessary in accurate spelling. Some research has been carried out in this area in recent years which indicates methods might be developed to assist the problem of individual differences. This might help to overcome also the frequent criticism that the amount of time spent in school is not justified by the general results obtained.

Summaries of three theses on spelling, "A Study of Spelling Errors", "Rules in Teaching Spelling", and "Do Spelling Books Teach Spelling?", are also presented. Though the populations used in all cases were small, the results of the experiments tend to confirm those of similar studies in the United States. No indication is given as to the date at which these studies were undertaken. An examination of the references in each of the three abstracts reveals none later than 1939 and the majority based on research in the first thirty years of this century. It is a pity that a book issued in 1961 should take into account so little of the research in spelling published in the last twenty years. A conservative estimate (taken from the references of the three volumes of the *Encyclopedia of Educational Research*) is six hundred reported research studies since 1940.

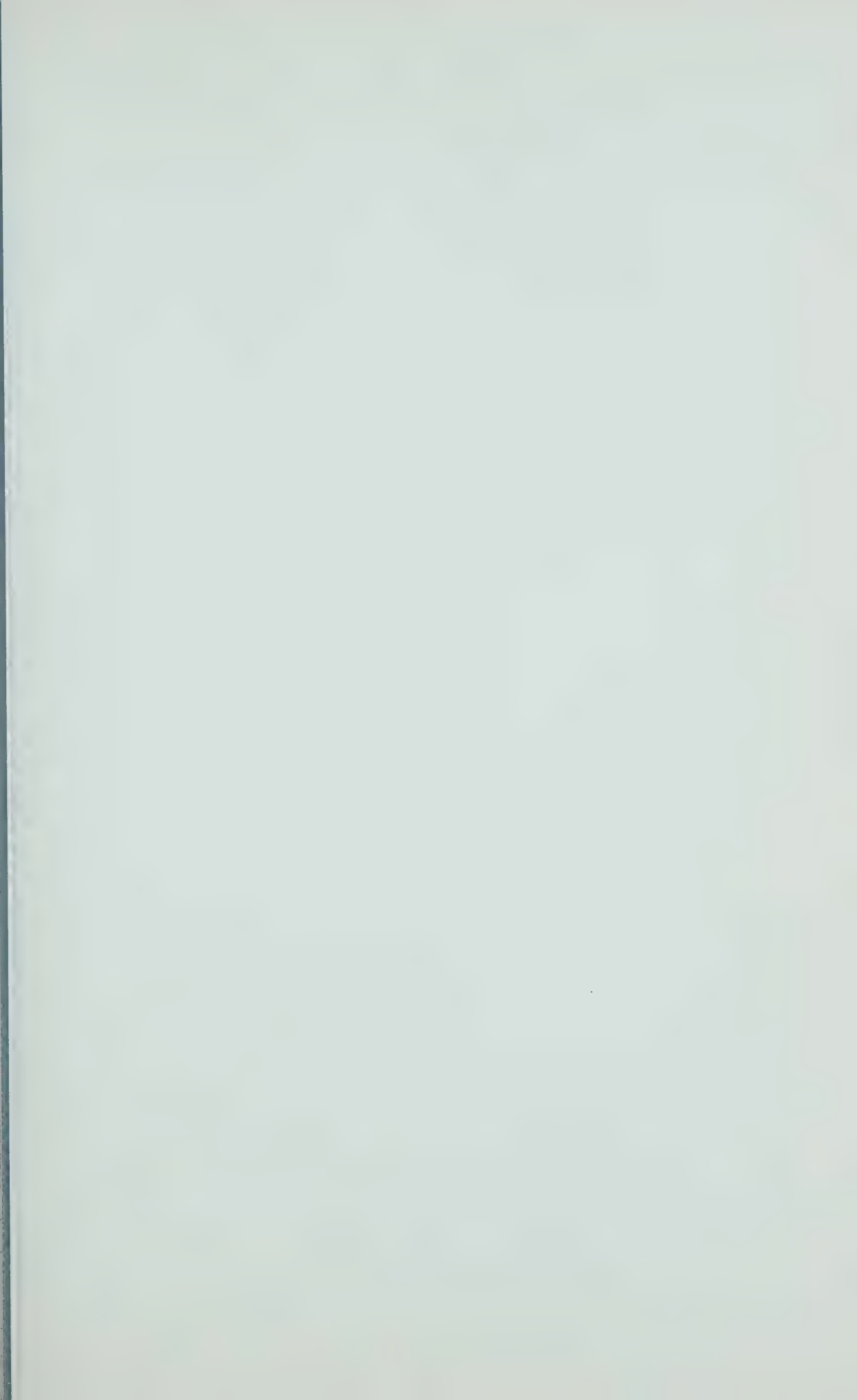
The two remaining chapters entitled "Notes for Scottish Teachers on English Spelling", and "A New Approach to the Simplification of Spelling", are of general interest. The first is a brief but excellent discussion of the etiology of the vagaries of spelling in the English language. The writer illustrates the elaborate series of conventions that have determined current spelling, and emphasizes that "the uniformity of modern spelling conceals considerable diversity in the pronunciation of words, a diversity caused by the social, psychological, educational and geographical differences". Material found in this chapter is not readily available to teachers and could be used to interest pupils in word derivations and etymological and orthographical changes. The final chapter is another version of the popular academic pastime of attempting to find a logical solution to spelling irregularities. The author suggests no new symbols but indicates changes which could be made to regularize present spelling and bring it closer to current pronunciation. While the suggestions appear to be more feasible than most, they do not take into account the present diversity of pronunciation differences suggested earlier or the problem of future changes.

The difficulties faced by any learner in writing the English language cannot be underestimated, and anyone interested in the attempt to find the most effective means of teaching spelling should include *Studies in Spelling* and the companion pupil's book, *The Scottish Pupil's Spelling Book*, on their booklist.

M. D. Jenkinson

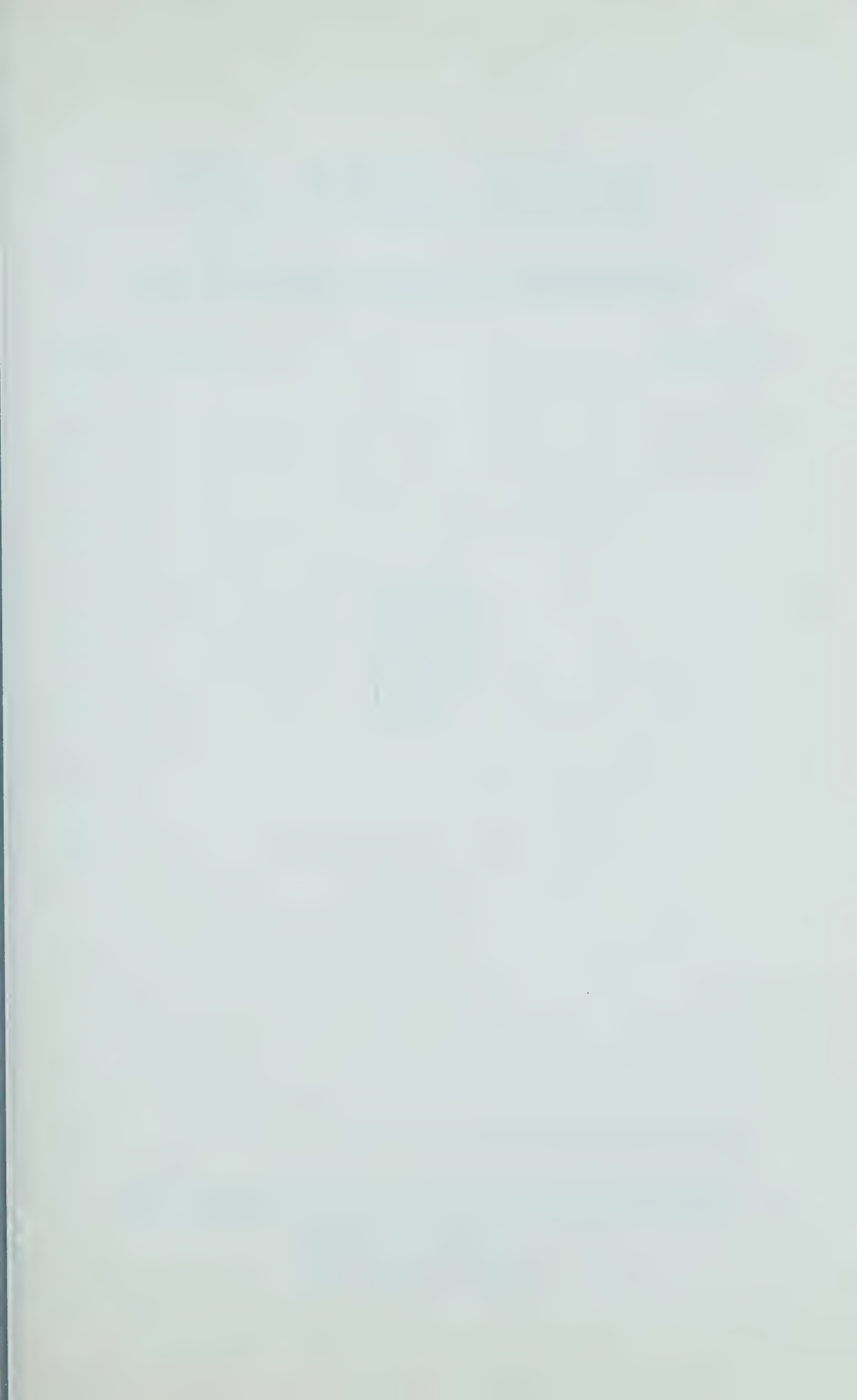
















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# THE LEGAL STATUS OF THE CANADIAN PUBLIC SCHOOL BOARD

FREDERICK ENNS AND H. T. SPARBY

## Introduction

Practice in school administration must give some attention to the law as it relates to administrative agencies, their organization, their authority and their duties. However carefully planned or desirable administrative procedures may be, they cannot be legally implemented unless they fall within the jurisdiction of the agency proposing them. Many aspects of school operation and maintenance have legal implications which must be heeded. Any study of the school as an institution, therefore, should not neglect to take into consideration the legal framework within which the school exists and within which it is administered.

In Canadian education the *ad hoc* school board is widely accepted as the proper agency for administering schools in the local district. The board's powers and duties are broadly set out in the respective School Acts of provincial legislatures. However, while statutes establish with some completeness the framework within which a school board functions, they do not define in detail all its operational procedures. The latter are often largely determined by court decisions. When legislatures grant broad discretionary powers to school boards, or when statutory provisions are vague or even contradictory, the interpretation of the law given by the courts can serve as a useful guide to school boards and to administrators.

## Sources of Legal Authority in Canadian Education

It is generally well understood that Section 93 of the B.N.A. Act assigns to provincial legislatures the exclusive right to make laws in relation to education. This assignment does not prescribe, however, the kind of educational services which legislatures may provide. Exercising their discretion in this matter, legislatures have created both central authorities and local authorities, and have assigned distinct, though not always discrete, functions to both. Each type of authority exercises its powers and discharges its duties through rules and regulations, which, as long as they are within the jurisdiction assigned, have the full force of law. However, the courts may be called upon from time to time to clarify the jurisdiction of the bodies involved and to rule on whether or not a particular action taken is within the powers granted.

The courts, operating as they do on the principle of legal precedent, have accumulated a body of legal decision and opinion

known as the case law. For full knowledge of legal relations and authority in school matters, it is therefore necessary to read case law in connection with statute law and constitutional law. Case law, however, has not been collected and systematized as has statute law. Rather, it is spread throughout the law reports from whence it must be searched out, brought together and interpreted.

### **Purpose of the Study**

To search out and present in layman's terms the case law as it relates to the public school board was the main purpose of the study reported here.<sup>1</sup> Thus the investigation revolved around such questions as:

- (1) How have the courts defined the legal status of the public school board?
- (2) What are the board's powers? From whence are they derived? How are they exercised?
- (3) What are the board's obligations and how does the board meet these obligations?
- (4) What are the board's legal relations to other bodies of government, notably municipal and provincial governments?

It was not intended that this investigation should be a complete legal treatise on the status of the school board, but rather a summary and study of the decisions of the courts so that these could be used by school people in conjunction with the statutes.

### **Research Design and Procedures**

A study which concerns itself primarily with questions of law clearly falls into the category of documentary research. Hence its prime value lies not so much in producing new knowledge, as in bringing together, comparing and interpreting a large amount of material presently scattered and unsystematized. The raw materials of such a study already exist. The data are predetermined, but the conclusions sought are probably no more predetermined than they are in any other form of research, for the comprehensiveness of the study, the penetration of the analysis and the logical procedures employed, are similar to those of all types of research.

A legal study in education presents a number of unique problems and difficulties. First, Canada has ten different provincial educational systems and although there are similarities in the controlling legal provisions, there are also significant differences. Furthermore, provincial school statutes are not static pieces of legislation.

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<sup>1</sup>F. Enns, *The Legal Status of the Canadian Public School Board*. Unpublished Ph.D. thesis, University of Alberta, 1961.



Instead, legislatures undertake more or less extensive revisions annually. The lack of consolidation of such amendments makes it difficult to know what the law is at any one time.

Secondly, there are also ten different provincial legal systems in Canada. Thus, although the ruling of a superior court in one province establishes a binding precedent for lower courts in that province, courts in other provinces are free to follow the decision or not, as they see fit.

Combining these two difficulties—ten different educational systems and ten different legal systems—makes generalization regarding school law extremely hazardous. Some generalization, however, is possible. When statutory provisions are similar from province to province, courts follow similar patterns of interpretation and decision in disputes involving these provisions. Furthermore, when a dispute goes to the Supreme Court of Canada (to the Privy Council in earlier times), the decision has binding force on all other Canadian courts. Generalization is also possible when application of the common law is involved, for this law applies with equal force in all common law provinces of Canada.

The researcher in school law, as in other fields of documentary research, is faced with the task of locating first of all his primary sources and secondly of bringing order to masses of seemingly unrelated data. He must search through the statutes and their amendments to find the statute law as it relates to schools. He must also search through the reports of legal cases, a task of no small magnitude. In addition, he must become acquainted with the vocabulary peculiar to law.

Such a researcher has at his disposal, however, a number of valuable tools. Statutes, though extensive, are collected and indexed in a good law library. Cases, though reported in a number of publications, are also indexed. Digests of cases, together with citations directing the reader to the primary sources, are published in topical arrangement in such works as *The Canadian Abridgement*. Other legal works such as *The Canadian Encyclopaedic Digest*, and *Halsbury's Laws of England* give further citations directing the reader to original sources. In addition, previous studies—in Canadian school law those of Bargaen,<sup>2</sup> Lamb,<sup>3</sup> and Ross<sup>4</sup>—direct attention to other cases which the investigator may consult. Finally, the report of the judgement itself indicates additional cases which were cited as precedents or which were used in the legal argument,

<sup>2</sup>P. F. Bargaen, *The Legal Status of the Canadian Public School Pupil*. Toronto: Macmillan Book Co. of Canada, 1961.

<sup>3</sup>R. L. Lamb, *The Legal Liability of School Boards and Teachers for Accidents in the Schools*. Unpublished M.Ed. thesis, University of Toronto, 1957.

<sup>4</sup>G. J. Ross, *The Courts and the Canadian Schools*. Microfilmed Ph.D. thesis, University of Chicago, 1948.



and these too can be investigated. Legal dictionaries offer the investigator excellent aid in understanding technical terminology.

Using these aids, it is possible for the researcher to prepare a relatively complete file of case reports on any topic which he is investigating. He can, of course, refer to statutes whenever necessary.

The report of a case may be brief or lengthy depending on the importance of the issue under consideration, the complexity of the legal provisions being applied, and the degree to which the case falls within an existing precedent. The report usually contains a statement of the issues involved, and of the statutory provisions on which the case is based. In addition to a review of the material facts involved and the legal argument developed, the report gives the decision of the court. When there is more than one judge, each may give an individual opinion, or there may be a majority opinion and one or more dissenting opinions. Often one judge speaks for the whole court. The report also indicates the eminence of the court, thereby establishing the weight or force of the judgment handed down.

In his investigation, therefore, the researcher must study the facts of the case, their interpretation by the court, and the judgment rendered. Then he must check the statutory provisions involved to determine whether or not they still apply or have been amended since the trial of the case. If he wishes to generalize the legal principle to other provinces, he must also determine whether similar statutory provisions exist there. Finally, he must examine the educational and administrative implications of a particular interpretation of a statute or the application of a particular precedent or principle of law.

### *Procedure in this Study*

The study reported here was conducted under the previously outlined conditions. The investigator examined *The Canadian Abridgement*, the *Canadian Encyclopaedic Digest* and previously completed studies to compile a preliminary file of cases involving Canadian public school boards. These cases were then classified topically to be used in the development of the legal principles reported in the dissertation. Reading of the law reports themselves provided additional sources of case titles which were added to the file. Since a case often deals with more than one legal point, it was also necessary to cross-index the preliminary materials.

The actual reporting of cases in the thesis consisted of a synoptic presentation of the main facts of a case, abstraction and statement of the legal principles inherent in the judgment, comparison and

contrast with other cases dealing with similar topics in other places and at other times, and finally, discussion of the implications for school board operations.

Because the range of school board activities is very broad, it was necessary to delimit the investigation rather sharply. Hence, only cases involving public school boards were dealt with. Separate school boards, and litigation in which they had been involved, were omitted for the most part, though it was recognized that legal principles derived from litigation involving separate school boards could be as applicable to public school boards as those derived from litigation involving public school boards are applicable to separate school boards. Further, all cases dealing primarily with school teachers or pupils were omitted from the study, even though many of them also involved school boards. The former could well form the basis of another study; the latter have already been studied.<sup>5</sup> Nor were the provisions of all existing statutes governing school boards considered extensively, the purpose of the study being rather to study litigation. In terms of school board functions, therefore, the study is neither exhaustive, nor complete, since not all aspects of school board functions have been before the courts.

### Scope of the Study

The study opens with a brief investigation into the nature of law and the functions of the courts. It then examines the following aspects of the existence, operation and legal status of public school boards in all the provinces of Canada:

- (1) The corporate status of a school board;
- (2) Legal relations between school boards and municipal councils, particularly with regard to fiscal matters;
- (3) Matters relating to school finance;
- (4) A board's powers and obligations in relation to school children;
- (5) A board's powers, obligations and liabilities regarding pupil transportation;
- (6) Statutory provisions and case law in relation to school premises;
- (7) School Board contracts and the contractual liability of school boards;
- (8) The legal liability of school trustees both as a corporate body and as individuals.

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<sup>5</sup>P. F. Barga, *Loc. Cit.*



### Major Findings of the Study

The courts have stated in the clearest of terms that the primary concern of the school board must be the education of children. Indeed, this concern is the only reason for the board's existence, for the duties imposed upon it and for the powers granted to it.

By constitution, exclusive right to make laws in relation to education is granted to provincial legislatures. These bodies, therefore, are held ultimately responsible for the educational services offered in their respective provinces. Nevertheless, every provincial legislature has chosen to delegate some of its authority to school boards.

Because a school board receives its power from the legislature, and because it has obligations imposed on it by that body, it is in large part an agency of the legislature in the local community. Only in those aspects of school administration in which the legislature has granted discretion to the board does the latter represent the local electorate. In other words, the school board is a single-purpose agency concerned primarily with implementing the educational policies of the legislature as laid down in school law, and only to a limited extent with implementing the wishes of the community. When local aspirations conflict with the policies of the legislature, the board has no alternative but to observe the provisions of the statutes. This is not to say, of course, that school boards may not press vigorously for modification of their powers and duties to bring them into congruence with local wishes; but until such modifications are actually made, the board is powerless to deviate from the statutory provisions governing it.

The fact that a school board may exercise governmental functions only, prohibits it from engaging in proprietary activities. In this respect it does not have the powers of a municipal corporation. Therefore, a school board may own property, or deal with its property, or engage in business affairs only to the extent that these activities contribute directly to its governmental function of operating schools. The board may not operate utilities or services, or make investments with a view to using the proceeds to defray school costs. However desirable such procedures may be for private business, or for municipal governments, they are not permitted to school boards. Rather, the board must depend for its revenues upon sources clearly stipulated in the appropriate legislation.

#### *Corporate Status of the Board*

To carry out its delegated functions the school board has been granted corporate status. In effect this is one of the most significant aspects of the board's legal status, for it places the board within the



purview of corporation law. Its corporate existence controls its methods of operation, the extent of its powers, and its liabilities. In essence, this means that a school board may act only as a corporate body duly assembled and following the procedures either laid down by statute or embodied in the case law relating to corporations. The corporate body is distinct from its members, though the members act for it. Membership in the corporation may change from time to time, but the corporation has perpetual succession, and its business, including its liabilities, carries on even when it has a completely new membership.

Corporate powers are controlled by the statute which creates the corporation, and only those powers may be exercised which are expressly granted or which are implied by the nature of the obligation imposed. Furthermore, when liability attaches, it does so to the corporate body and not to the individual members themselves. However, by taking action beyond the powers of the corporation, members may remove themselves from corporate protection and thereby become individually liable. They do so when they act criminally, in bad faith, or with malice.

#### *School Board-Municipal Council Relations.*

School Boards and municipal councils are both agencies of local government. They have different functions and responsibilities, but because they operate within the same geographic area and perform related functions, their respective jurisdictions are not always clearly distinguishable. Then relations between the two may become the subject of dispute before the courts. Since both school and municipal corporations are creatures of the legislature, the basic relations between them are set forth in the statutes. In disputes between them the courts have held that since each has been granted discrete powers and responsibilities, neither is subject to the other. Each is supreme within its own jurisdiction.

This has been held to mean that the municipal council has no authority to interfere in the affairs of the school board. Nor, conversely, has the school board any right to interfere in the affairs of the municipality. Each is responsible to its own constituents only (and to the legislature). Their respective constituencies, though overlapping, are not necessarily identical, and therefore the municipal council, when acting for its ratepayers, is not necessarily acting for the school board's ratepayers. This is particularly true in areas where there are both public and separate school boards.

The chief area of friction between school boards and municipal councils is in the matter of the school board's requisition for funds and the municipal council's obligation to collect and pay over the

necessary taxes. Councils have often held that since they collect the money, they should control its spending. The courts, on the other hand, point out that the council's designation as a collection agency is merely a means whereby the legislature intended to eliminate inconvenience, confusion and the added expense to rate-payers of maintaining tax-collecting machinery by both municipal and school authorities.

Legislation in some provinces, as in Ontario, requires municipal councils to scrutinize school estimates to insure that proposed expenditures are *intra vires* the board. If they are within the board's powers, council has no discretion and must collect the necessary taxes. In other provinces, as in Alberta, municipal councils may appeal requisitions, which they consider excessive, to an outside authority such as the Local Authorities Board, which may arbitrarily reduce the school board's estimates.

Such a reduction can place a school board in an untenable position. By statute a school board is required to provide school accommodation and instructional facilities and services which require the expenditure of sizable funds. By provincial government regulations such as those having to do with the curriculum, further expenditures are necessary. In addition, trustees attempting to meet special local educational aspirations, find still further expenditures called for. No school board can escape such obligations nor can its discharge them partially or imperfectly without risking public censure or even legal action. Yet, external agencies with no legal obligation or responsibility for education, are granted authority by statute to reduce school board requisitions. Such reductions are particularly indefensible when made late in the fiscal year, after a school board has made its commitments and has expended a large portion of its budgetted estimates. The basic cause of this situation is the incompatibility of certain provincial statutes, an incompatibility which should be resolved.

### *Other Aspects of School Finance*

The courts have held that a municipal council can impose and collect an educational tax levy only upon the authorization provided by a school board's proper requisition. Such a principle of law points up the need for submission of school requisitions in proper form and at the time required by statute. It has been held in some provinces, that unless school requisitions are properly submitted, the board cannot demand payment.

When a council has paid the board's requisition, it has met its entire obligation. It follows that boards may not submit a partial requisition, nor more than one requisition in one year, unless the



legislation provides for such action. Nor may a board which has received full payment of its requisition participate in financial benefits accruing to the municipality in the form of tax arrears or grants in lieu of taxes on the property of a senior government.

School borrowing, as well as other aspects of school finance, is controlled by statute. It has been repeatedly held by the courts that such borrowing must be done by following the provisions of the statute. Proper authorization must be sought and obtained. An attempt to circumvent the statutory procedures in regard to borrowing, by adding sums to current requisitions, is considered to be an act of bad faith and as such is severely censured by the courts.

Since the school board is a corporation, with borrowing powers clearly laid out by legislation, anyone who lends to the board must make sure that the proposed borrowing is within the board's powers. If it is not, the lender may be without remedy, for the corporation cannot be held liable for borrowing in excess of its powers. One exception to this rule, however, does exist. If the money borrowed is used to pay legitimate debts of the corporation, the lender may recover to the extent that his money was so used. The courts hold that in this case, since the borrowing has not resulted in increasing the corporation's liabilities, there has been merely an exchange of creditors.

When, under some circumstances, municipal corporations attempt to attract business or industry by making tax concessions or fixed assessment agreements, school finances may be indirectly affected. Such business or industry, attracting new workers and their families, may necessitate the provision of educational facilities costing more than the additional tax revenue returned to the community by the business or industry. In such a case, other ratepayers are required to pay higher school taxes than they otherwise would. In effect, this means an increase in school taxes, not by action of the elected school board, but by action of the municipal council. To whom, and to what extent the school ratepayer has recourse under such circumstances is not clear and represents a further example of school legislation requiring clarification. The question has not been before the courts and the statutes make no reference to it.

### *The School Board in Relation to Pupils*

As has already been stated, the prime justification for the school board's existence is the need for educating children. It is firmly established that children have a statutory right to education. This being so, an obligation is cast on the authorities to provide for the realization of this right. School boards therefore have the duty to provide educational facilities for all children who have been granted



the right. They must provide buildings, instructional personnel, transportation where necessary, and other instructional materials and equipment required for conducting the educational program. School boards do not have discretion in whether to provide facilities or not. They must provide them, and may be forced by legal action to do so. Nor may boards discriminate against any children by providing facilities or transportation for some and not for others. Boards may, of course, make alternative arrangements by providing educational services indirectly. They may, for example, make boarding arrangements or pay tuition in another school system.

The child's right to education, however, and therefore the board's obligation to provide educational facilities, is not absolute. A child may be excluded from school for conduct which is unacceptable in the school environment. Thus, damaging school property, or other serious misdemeanor, may be conduct through which a child forfeits his right. Furthermore, depending on the provisions of the prevailing statutes, a child may also be excluded for refusal to obey health laws such as those requiring immunization, or for refusal to participate in patriotic and other school exercises. However, a board which deprives a pupil of his statutory right, may do so only by following precisely the provisions laid down, for the courts construe such provisions strictly.

Even though a school board finds that restrictive legislation prevents it from carrying out its statutory obligations, this does not permit it to operate in an unauthorized manner.<sup>6</sup> The board may not, for example, make agreements for additional finances which are not sanctioned by the statutes. Nor may it close some or all of its schools in order to save money. The courts hold that the board cannot escape its obligation to educate all the children under its jurisdiction. If a board cannot discharge this obligation, its only recourse is to resign, thereby shifting its responsibility back to the legislature whence it came and where, by constitution, the ultimate responsibility for education rests. School boards may, of course, press for amendments of restricting legislation on the grounds that it is unreasonable for a legislature to impose obligations on the one hand and to grant less than the necessary power to discharge the obligations on the other.

### *School Transportation*

The enlargement of school attendance areas and the resulting removal of school facilities from close proximity to pupils' homes cast a further obligation on school authorities. The child's right to education remains the same as before. His obligation and that of

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<sup>6</sup>*McLeod v. Salmon Arm School Trustees*. 4 W.W.R. 385, (1952) 2 D.L.R. 562.

his parents or guardians is unchanged. Therefore, the right of the authorities to centralize school facilities obligates them to provide transportation. The courts hold that pupil conveyance must be conducted in good faith, without discrimination, in the public interest, and according to the provisions of the statutes. Within these limits, however, a school board may exercise discretion. It may draw up and change bus routes. It may also make agreements with parents or guardians to board pupils near school or to pay tuition in another school in lieu of transportation.

Since pupil conveyance adds a risk of injury to children travelling to and from school, the board must exercise its power to convey with due care. If it exercises its powers negligently, it may be liable in damages for injuries which are sustained. Where the duty to convey pupils is statutory, the board cannot escape liability for negligence in case of accident or injury, even though the duty has been assigned to an independent contractor. When the power is discretionary, the board may escape liability by employing an independent contractor. In either case, if the board carries out its powers by employing a servant, it is liable for the servant's negligent acts.

### *School Premises*

Provision of school premises is, of course, necessary for the discharge of the board's obligation to provide school accommodation. Procedures for the acquisition or change of a school site are controlled by statute and vary from province to province. In some provinces procedures are extremely complex, requiring consent of ratepayers' meeting and/or of municipal councils, and providing for arbitration procedures in case of dispute over choice of site. In other provinces procedures are as simple as having the board select a site and getting the approval of the Minister. In general, it is true that the more complex the required procedure, the more frequently dispute resulting in litigation arises. It is also true that disputes over choice or change of school sites is no longer as common as it once was. The explanation may well be that with present centralization of schools, and the provision of school conveyance, the location of the school house is no longer as critical as it was in earlier times. It may also be that the school is no longer the community centre it once was, and therefore people are less intimately concerned with its location.

The matter of compulsory acquisition of school sites, particularly in urban areas, remains a question of active concern. School boards have the right to expropriate lands for school purposes. However, since such expropriation denies the owner the right to dispose of



his property as he wishes, or otherwise restricts his rights in regard to his property, the courts construe expropriation provisions strictly. It has been held that a board may enter upon expropriated lands immediately upon filing its caveat, even though the determination of the value of the lands may not be completed for some time. It has also been held that a board may not expropriate the lands of another public authority which also has the powers of compulsory acquisition.

Upon occasion the courts have held that a school board is not subject to building restrictions in force in a community. Because the board has the right to acquire land in any part of the city, it is held to have the right to build any type of school on such land, as long as the building meets the regulations of the central education authority for the province. This right does not, however, give a board general immunity from municipal by-laws.

Boards sometimes find it necessary to provide temporary school accommodation, and they often rent community or church facilities. The expenditure of money in doing so has been held to be proper, and in renting church premises, has not been considered as public support of a denominational group.

### *School Board Contracts*

Because the school board is a corporation, it conducts many of its affairs by contracting with other individuals, but it can exercise its contractual powers only as a corporate body. That is to say, it can come to a formal agreement only at a duly constituted meeting of the corporate body and only by following the proper procedures in conducting such a meeting. Proper notice of meeting must have been given, or failing that, unanimous and formal waiver of notice must be granted. If proper procedures are not followed, the contract is not legally enforceable, for at law, the corporation has not obligated itself. Acts of individual members are not the acts of the corporation and such acts do not bind the corporation.

The school board may, of course, enter only into those types of contracts which are specifically or impliedly authorized by statute. In general, contracts necessary for carrying out governmental functions are permissible, but those involving a purely proprietary function are prohibited. In addition, it has been established that a board may not contract an obligation beyond the limit of finances which have been approved. This restriction is especially applicable in constructing or remodelling school buildings. A board which has received the approval of the ratepayers for construction to cost a given amount cannot then proceed legally with a project costing in excess of that amount. Nor may it engage architects to draw detail-



ed plans and specifications before the financing of the project has been authorized. The courts have ruled that an architect may be engaged to draw up preliminary sketches and to make preliminary estimates to guide the board and ratepayers in estimating actual costs of a building. But the board may not go beyond this until the plan is approved as required by statute.

When a school board has contracted a legal obligation in a regular manner, it is the board, and not the individual trustee, which is liable in contract. The other party to the contract must look to the corporation for satisfaction. Because it has perpetual succession, the board remains obligated even though its membership, its name, and even its territorial limits may have changed. Even the dissolution of a board as a corporation does not nullify its liabilities, and the statutes may well provide for the legal assumption and discharge of the liabilities by the board's corporate successor.

#### *Legal Liability of School Trustees*

As has been stated, primary legal liability attaches to the school board as a corporation. However, individual trustees may become personally liable if they act in bad faith, in a discriminatory or malicious manner, or if they violate the clear provisions of the statutes. A few specific examples of such acts are wrongfully excluding a child from school, illegally contracting with the board of which they are members, employing unqualified teachers, maliciously refusing to transport a child entitled to transportation or illegally entering upon school property. For such offenses trustees may be held personally liable and subject to the penalties provided by the statutes or by the common law. Further, if the statute requires trustees to take proper security from the secretary-treasurer and they refuse or neglect to do so, they become personally liable for loss of school funds in the event of the secretary-treasurer's defalcation. However, trustees are subject only to the penalties provided for a particular offense and when a statute provides a specific penalty for a specific offense, they may not be punished in other ways.

In spite of the possibility of personal liability, trustees should not hesitate to exercise their proper powers with confidence, vigor and decisiveness. Courts recognize the exposed position occupied by public officers, and are reluctant to find against them personally except on the clearest of evidence. Time after time they have pointed out that trustees have every right to exercise their powers to the limited granted them by law. Furthermore, school boards and individual trustees come clearly within the provisions of the *Public Authorities Protection Acts* of the various provinces.

### Some Implications for Administrators

As implied in the introductory paragraphs of this paper, school administrators should be legally literate. One way to gain a measure of competence in legal matters is to study school legislation. Such a study alone, however, is not sufficient. A study of court decisions is also necessary because it illuminates and gives insight into the application and operation of the law in practice.

Quality in administration is determined in no small measure by the conceptual skills of the administrator. A study of school law can add much to these conceptual skills. In the purely practical realm, knowledge of law can save school boards money and inconvenience. Court costs and damages are frequently the penalties paid for ignorance of the statutes, or of the provisions of the common law; and irksome delays often result from improperly complying with the statutes.

It should be added, of course, that administrators should be concerned with more than the legality of an action. The mere legality of an act is no assurance that it is necessarily in the best interests of the schools or the community. An action which, though legal, may do damage to the cause of education or to the best interests of children, might better be left undone.

By being more conversant with statutory law and its interpretation by the courts, administrators can advise their boards more effectively. It is only through such effective advice, and vigorous administration that boards can hope to cope with the complexities of their tasks in the future. One might conjecture that only such a high quality of school administration will insure the continued existence of local, fiscally independent school boards.



# F. W. G. HAULTAIN: EDUCATIONAL STATESMAN OF THE CANADIAN WEST

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## *Introduction*

Frederick William Gordon Haultain made numerous contributions to the growth and development of Western Canada during his career of public service. Most noteworthy of these contributions was his undaunted persistence in seeking firstly, responsible government and secondly, provincial status for the North-West Territories. As the accepted leader of the Territorial Assembly from 1888 to 1905,<sup>1</sup> he worked toward the successful completion of these goals. In 1905, as a result of his political defeat at the hands of Walter Scott and the Liberals, Haultain became the leader of the opposition in the Saskatchewan Legislative Assembly. In this position his opinion was highly respected by the government and his viewpoint often found its way into proposed legislation.

Even though Haultain had given twenty-four years of his life to the development of political institutions on the Prairies, he was only fifty-four in 1912 when he retired from the Saskatchewan Legislature to accept the responsibility of Chief Justice of the Saskatchewan Supreme Court. He served in this capacity until 1938 when he left the West to retire in Montreal. During his tenure as Chief Justice, he served as a member of the Senate and as Chancellor of the University of Saskatchewan.

A review of Haultain's career shows that educational policy was one of his first concerns and greatly affected his future. He was intensely interested in establishing what he regarded as the best educational system for the Territories. In his position of political leadership in the Territories, he was able to secure enactment of many of his ideas on education, thus providing a statutory framework for some of his most outstanding contributions to education.

## *Establishment of Public, Non-Sectarian Education*

The outstanding characteristic of educational development during the period 1884-1905 in the North-West Territories was the trend toward a public, non-sectarian school system. Haultain gave his full support to this development. It was his opinion that the people of the West should present a united front in their request for responsible government and provincial status. He regarded such

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<sup>1</sup>Between 1890 and 1892 Haultain was twice replaced as chief executive in the Territorial Assembly, first by Dr. Brett of Red Deer and later by Mr. Cayley of Calgary.



things as provincial party politics and separate schools as divisive forces and hence undesirable elements in the West. As early as 1891 Haultain expressed his opinion on separate schools to his constituents at Pincher Creek, reported as follows:

We now have two systems. Under our present constitution a Protestant or Roman Catholic minority have the right to establish separate schools. He (Haultain) was thoroughly opposed to such a system. He did not wish to interfere with religious belief, but religious training was not necessary in the school. We did not need to introduce religious teaching. We got that at home, at the churches and in the Sunday Schools. There was no reason why Protestants should not go to school with Catholics. His position with regard to the separate school question was that he would work and vote against it as hard as possible.<sup>2</sup>

As indicated in Haultain's remarks, the earliest provisions for education in the Territories established dual control over the schools. The first effective school legislation in 1885 empowered the Lieutenant-Governor to appoint a Board of Education comprised of two sections, Catholic and Protestant. The Board as a whole was to exercise general control over the school system, while each religious section governed schools of its faith through control over general regulations, books and equipment, programs of study, conditions of teacher certification and appointment of inspectors. This prerogative of the religious minorities gradually disappeared as the Territories, primarily under Haultain's direction, moved towards a non-denominational school system.

### *School Ordinance of 1892*

The school ordinance that abolished the dual control of the Board of Education and that stands out as the most important measure taken towards "national" schools was passed in December 1892. Twice previously this bill had been introduced into the Assembly by Mr. D. Mowat, and withdrawn for further consideration. To the surprise of many, Haultain reintroduced certain parts of Mowat's bill in the session of 1891-92 after having requested its withdrawal for further consideration. The controversial nature of the original bill led Haultain to move cautiously. He realized that the bill, when passed, would provoke protests from the Catholics who would view it as an attempt to deprive them of their control over their schools. Thus by introducing it in piecemeal form, he sought to lessen the opposition. The changes proposed by Haultain in his bill affected inspection, teacher certification and textbooks. The legislation provided for appointment of inspectors by the Lieutenant-Governor rather than by the sections of the Board of Education; and the appointment of a general board of examiners for teachers' certificates and a uniform system of textbooks.

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<sup>2</sup>*The Macleod Gazette*, February 5, 1891.

In the next session, late in 1892, the passage of Mr. Mowat's bill placed all publicly supported schools under secular control rather than under religious control. A council of Public Instruction made up of the Executive Committee and four other members appointed by the Lieutenant-Governor-in-Council replaced the Board of Education. The opposition of the Church persisted though the four appointed members represented equally the Catholic and Protestant faiths. There were to advise, but not vote on educational matters. The powers formerly vested in each section of the Board of Education and in the Board as a whole were now vested in the Council of Public Instruction. The ordinance provided for one program of study, one set of textbooks, and one set of regulations for teacher certification regardless of religious denomination. It did not, however, do away with the right of a religious minority to establish separate schools or share in governmental grants for education. The privilege of giving religious instruction in any school was continued, but was limited to the last half hour of the day. Haultain played a prominent part in the formulation of this bill even though it was introduced by Mr. D. Mowat.<sup>3</sup> It certainly embodied Haultain's philosophy concerning the relative roles of church and state in education.

#### *Appointment of D. J. Goggin*

One of the clauses of the 1892 Ordinance that had an important bearing on the future educational development of the Territories empowered the Lieutenant-Governor-in-Council to appoint a Superintendent of Education. The man selected by the Executive Committee was D. J. Goggin. He was one of the foremost Canadian educators of his day and contributed much in nine years to the educational system of the Territories.<sup>4</sup> Inasmuch as Goggin's main concern was concern for education, his contributions appear to overshadow those of anyone else in the Territories during this period. It is the opinion of this writer that Haultain also made valuable contributions, but that his were not as widely recognized because of his position in governmental rather than educational circles. The work of these two men complemented each other's nicely. It would be difficult to say whose work was the most valuable. Haultain was concerned with the legal and administrative framework including such things as control, finances and expansion of educational facilities. Goggin's contribution fell rather in the application and utilization of the system inaugurated by Haultain.

<sup>3</sup>The *Regina Standard*, September 2, 1892. Frank Oliver in speaking to the Assembly pointed out that Mr. Mowat should show more gratitude to Mr. Haultain for the help received in drafting the school bill.

<sup>4</sup>A. D. Selinger, "The Contributions of D. J. Goggin to the Development of Education in the North-West Territories 1893-1902." (Unpublished Master's thesis, University of Alberta, 1960)



*School Ordinance of 1901*

The final step taken in the Territories towards a national school system came with the passage of the School Ordinance of 1901. This enactment placed education directly under the control of a Department of Education with a member of the Executive Committee acting as the Commissioner of Education. Haultain was the first to occupy this position. The 1901 Ordinance marks the formal end of a period of transition in school control from a board constituted along denominational lines to a government department responsible to the Assembly.

Still the 1901 Ordinance did not completely rule out all religious influence in education matters. An Executive Council of five members, at least two of whom were Roman Catholic, was appointed by the Lieutenant-Governor-in-Council to advise the Department of Education on matters of school inspection, examination, training and licensing of teachers, courses of study, teachers' institutes and text and reference books. The minority were also given the privilege of establishing their own schools and school districts, if they so desired. Haultain, as he directed legislation toward a national school system, had been careful not to deprive minorities of the right to establish their own schools. However, by depriving religious groups of control over such things as inspection and teacher certification he took away their distinctive character and freedom of action. That the minority realized there were few advantages in forming separate schools is evidenced in the small number of school districts they formed in the period.<sup>5</sup>

The move toward public, non-sectarian schools was not Haultain's only contribution to education. He also did a great deal to provide generous appropriations and grants for education and by so doing made education one of the costliest items in the Territorial budget. At a time when the Assembly was pleading for a greater financial appropriation from the federal government, Haultain refused to reduce the educational expenditure. He felt that education warranted and should get as liberal an expenditure as possible. This is partially evidenced in the increase of educational grants from \$106,600 in 1893 to \$239,400 in 1904.<sup>6</sup>

The Haultain Government dealt with numerous educational problems during the Territorial period. Inasmuch as the foundations of the educational system were laid prior to his taking office, it remained for Haultain and his associates to deal with such things as growth of population and schools, improvements, development of

<sup>5</sup>Of the 18 separate school districts in existence in the Territories in 1905 only four of these were formed after 1894 and none after 1901.

<sup>6</sup>Adam Shortt and Arthur Doughty, *Canada and Its Provinces*, Vol. XIX (Edinburgh University Press, 1914), p. 155.



national schools as suggested by the changing nature of the population,<sup>7</sup> and encouragement of education through grants. The following statement of J. H. Ross (one of Haultain's closest associates in government) illustrates to some degree the role of Haultain in developing education in the Territories:

Regarding the educational system, Mr. Haultain deserves praise. He has done a great deal towards bringing about the uniformity of the system. If he never did another thing, Mr. Haultain has done for the Territories what probably no other man will have the opportunity of doing for some years to come . . . The perfection of the school system is largely due to Mr. Haultain.<sup>8</sup>

### *Roman Catholic Opposition to Haultain's Educational Policy*

As early as 1891, Father Lacombe, one of the leading Catholic clergy in the Territories, expressed concern over the declaration of Haultain to "work and vote against Separate schools".

I am very much surprised and sorry that Mr. Haultain took for his platform that "religious training was not necessary in the schools; we did not need to introduce religious teaching, we got that at home, at the Churches and at the Sunday School", that "his position would be to work and vote against it as hard as he could" . . . As a Christian priest and a defender of principles, I believe and consider sacred and necessary that no compromise on my part can be offered. I will retort to his meance in the same manner, viz: "I will work and vote against him as hard as I can!" Yes, sir, to the last we will fight for our religious system and privileges in our schools. We may be overwhelmed, but we will not surrender.<sup>9</sup>

The Catholic opposition to Haultain's policy became particularly evident with the passage of the 1892 School Ordinance. The Catholic clergy felt their right, previously safeguarded in the sectional prerogative and vote of the Board of Education, was now to be sacrificed by the abolition of the Board of Education. As a result they petitioned the Dominion Government in an attempt to have the legislation ruled *ultra vires*. Haultain, on behalf of the Executive Committee, replied to the petitions presented to the Governor-General-in-Council. He pointed out that the 1892 Ordinance reenacted previous legislation.<sup>10</sup> He further claimed that the Catholics,

<sup>7</sup>Bernal E. Walker, "Public Secondary Education in Alberta: Organization and Curriculum 1889-1951", (unpublished Doctor of Philosophy dissertation, Stanford University, 1955), p. 19. Dr. Walker suggests that "in the early territorial period, when the small white population was evenly divided into two compact religious groups, the North-West Council provided for a dual type of sectarian control of education. As the Protestant part of the population expanded and broke up into many diverse sects, there was a movement in favor of public non-sectarian control of schools.

<sup>8</sup>*The Regina Standard*, October 21, 1897.

<sup>9</sup>*The Macleod Gazette*, February 19, 1891.

<sup>10</sup>The significance of Haultain's action in the 1891-92 session of the Territorial Assembly becomes more evident in light of the defence used in reply to the petitions of 1894. The Catholics felt that the 1892 Ordinance imposed a uniform course of instruction and a uniform selection of textbooks and deprived them of their right to examine and license teachers. Haultain was able to point out that some of these changes were not new, in that they had been law as a result of the earlier statute that he had introduced in the 1891-92 session. Inasmuch as the 1892 School Ordinance simply reenacted a number of regulations, there was no point in ruling it *ultra vires*.

immediately prior to the passage of the 1892 Ordinance, did not possess control over such things as examination and licensing of teachers and appointment of inspectors. In light of his statements the Governor-General-in-Council did nothing with the Roman Catholic appeal and turned the matter over to the Territorial Assembly where it was promptly voted down.

The Catholics were not content to let the matter drop and published a treatise entitled, *Hostility Unmasked*. This document accused Haultain and Goggin of acting under the influence of a secret society "to lessen the influence of the Catholic Church in the schools". Haultain openly denied these accusations when the matter came before the Assembly.

Open Catholic opposition to Haultain subsided somewhat after 1894, but reappeared during the autonomy struggle of the early 1900's. As the Liberals in Ottawa delayed the autonomy question, people began to speculate that the reason for their delay was the fear of opening the bitter issue of separate schools before the 1904 election. Public and press greatly magnified the issue to the point that the whole nation was anxiously awaiting to see how Laurier and the Liberals intended solving the problem. When Laurier came out in support of separate schools for the new provinces, one of his cabinet ministers, Clifford Sifton, resigned and Haultain began a violent attack on the policy of the federal government. Laurier was eventually forced to alter the bill and he chose to use the Ordinance of 1901 as the basis of the proposed educational system.

This move did not satisfy Haultain as he felt the federal government had infringed on the rights of the new provinces. Speaking in two Ontario bye-elections he announced his intention to use every constitutional means to prevent the proposals from being carried out. This pronouncement, coupled with his Conservative leanings, was sufficient reason for Laurier to overlook Haultain<sup>11</sup> as one of key administrative figures in the new provincial governments.

In the election campaigns for the premiership of Saskatchewan, Roman Catholic opposition once again faced Haultain. He continued, in spite of this threat to his political future, to speak in favor of national schools.

I believe in a National School system and that the function and mission of schools is to mould and assimilate all families making the prairies their home. Is it fair for one denomination to be especially picked out for recognition?<sup>12</sup>

These continued pronouncements on the part of Haultain led the Archbishop of St. Boniface to publish a memorandum that was

<sup>11</sup>O. D. Skelton, *Life and Letters of Sir Wilfrid Laurier*, Vol. 11 (New York: The Century Co., 1922) p. 244.

<sup>12</sup>C. Hopkins, *Canadian Annual Review*, 1905, p. 251.



directed to all clergy in his diocese. The main content of the letter included the following grievances against Haultain:

1. He has taken away from us the control of our schools through the Catholic section which he abolished in 1892.

2. He has taken away from us our Catholic books.

3. He has positively refused to appoint a Catholic inspector, notwithstanding the earnest request of the Archbishop of St. Boniface, seconded by the Venerable Bishop of St. Albert.

4. He has been most exacting and unfair toward Catholic teachers coming from England or different parts of Canada; the result is that in several Catholic centers the children do not know how to read and write.

5. He has opposed publicly the continuation of the actual Separate School system when the question of the organization of the new Provinces came up and he has declared that his first action if he should come back to power would be to abolish the clause in the law concerning a System of Separate Neutral Schools in the two new Provinces of Saskatchewan and Alberta. We also know the fiery speeches he has made in Ontario appealing to the worst prejudices of race and creed, denouncing His Excellency, the Apostolic Delegate, in awful terms, and boasting, if anything remains to Catholics, as far as Separate Schools are concerned, it is against his will.

6. In view of these facts how can Catholics, reasonably and conscientiously, give their vote in favor of Haultain and of the candidates who recognize him as their chief and leader, whom they are bound to follow and obey? The Catholics should, then, unite and vote for those who are in favor of the actual system of Separate Schools, though these Schools are neutral, because it is a partial recognition of their rights as free citizens of this country. Now is the time to show that we are a factor in public affairs. Let us unite, then and cast our votes for the leaders who favor Separate Schools, and their followers.<sup>13</sup>

Shortly after the Archbishop's letter was made public, Haultain retaliated with a manifesto to the people of Saskatchewan. He openly repeated the charges that the educational clauses of the Autonomy Bill were a result of a conspiracy, conceived at Ottawa, against the rights and liberties of the Province. Most challenging were his closing remarks:

. . . . As the matter now stands, it is clear to me that the only safety for our educational system lies in once and for all establishing it on an absolutely national basis, with equal rights for all, and special privileges to none. Pledged to carry this out I appeal to the free and enlightened electors of Saskatchewan to pronounce with no uncertain sound against clerical aggression, and its political allies who are attempting to barter the educational freedom of this Province for a temporary advantage.<sup>14</sup>

One cannot determine the effect of these two documents on the voters of Saskatchewan, but suffice it to say that Haultain was unsuccessful in his bid for the premiership of Saskatchewan. Undoubtedly part of his failure can be attributed to the fact that he had alienated a portion of the Catholic population.

### *Interest in Higher Education*

Haultain's work in the field of education, as noted before, was not limited to developing a national system of education. Among

<sup>13</sup>The Regina Standard, November 29, 1905; and C. Hopkins, *op. cit.*, 1905, p. 253.

<sup>14</sup>*Ibid.*



other things he showed a sincere interest in the development of university education.

The last decade of the 19th century was a period of remarkable growth in territorial education. This growth, however, was not sufficient to warrant the establishment of a university. Yet as early as 1894 a group of prominent men in the Territories gathered to discuss the topic of a university. Goggin and Haultain were the two main speakers. Further interest and action was not forthcoming until 1903 when Haultain introduced the idea of a territorial university to the Assembly. Neither a name or a site was suggested for this institution as Haultain saw no need for the university to commence functioning until provincial status was established. He had two main purposes in placing the university ordinance on the statute books. The first reason was that he desired to illustrate the type of university he felt the Territories should have—one free from political and denominational control. Secondly, Haultain had been assured of a land grant from the federal government, and he wanted to show the framework for such an institution.

The 1903 University Ordinance, which was organized and presented by Haultain, was significant in light of the eventual university legislation that was formulated by the new provinces of Alberta and Saskatchewan. Both of these followed Haultain's plan rather closely. Both ignored his idea that the university should be an institution free from political control. Haultain's presence in the Saskatchewan Legislature was felt, however, and the University of Saskatchewan legislation is a good example of Haultain's opinion being respected even in his capacity as leader of the opposition. As a result of his amendment the University of Saskatchewan Act embodies the principle that the university should be governed by convocation and not the provincial government. No such provision is contained in the University of Alberta Act even though it too is based on the original pattern established by Haultain and the territorial government.

The action of Haultain in connection with the 1907 University of Saskatchewan Act illustrates the true character of the man. As the leader of the opposition he was in a position to criticize the university legislation. Instead he pointed out that there were times when the government and the opposition were allowed to drop their differences and unite on a measure for the good of the province as a whole. To him there was no more important legislation than that of giving birth to higher education.

Following the passage of the University Act in Saskatchewan the roll for the convocation was drawn up and nominations received for the chancellorship and senate. Of those nominated to the senate

Haultain received the largest number of votes. After 1917 he was given further opportunity to serve the university, this time in the capacity of chancellor.

### *Conclusions*

During his career of political and judicial leadership in Western Canada, Haultain left an indelible mark on education. His aims and educational objectives led him to:

1. Take the lead in trying to establish a statutory framework for a public, non-sectarian school system.
2. Recommend and attempt to provide for the establishment of a liberal grant structure to help encourage adequate provision educationally for the expanding population of the Territories.
3. Elect, appoint and continually support D. J. Goggin, who filled the positions of Superintendent of Education and Director of Normal Schools.
4. Defend the provincial rights of the new provinces of Alberta and Saskatchewan when the Laurier Government attempted to enforce establishment of a separate school system. It is important to note that Haultain was not acting against separate schools because of a dislike of Roman Catholics, but rather because he felt separate schools would weaken the West in its growth and development.
5. Work toward the establishment of a western university that would be free from political and/or religious control.

# A SURVEY OF SECOND LANGUAGE PROGRAMS FOR ENGLISH-SPEAKING CHILDREN IN GRADES ONE THROUGH NINE IN CANADIAN SCHOOLS

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## Problem

### *The Purpose of the Study*

The purpose of this study was to make a survey of second language programs for English-speaking children in Grades One through Nine in public tax supported Canadian schools. Information was sought concerning the following matters.

1. The responsibility of each of the following authorities with respect to teaching a second language in Grades One through Nine:
  - (a) Department of Education (does the Department require it, permit it, encourage it )
  - (b) School System (Board of Education)
  - (c) School (principal and staff)
2. The objectives of the program
3. Choice of language
4. Qualifications of teachers
5. Types of teachers
6. Grades involved in the program
7. Selection of pupils
8.
  - (a) Amount of time
  - (b) Scheduling of time
  - (c) Source of time
9. Articulation
10. Administrative problems

### *Importance of the Study*

An increasing interest in the teaching of a second language in grades below the senior high level in Alberta schools during the past few years has been shared by both laymen and educationists. The Alberta Home and School Federation, in its submission to the Executive Council of the Government of Alberta on December 19, 1959, requested that instruction in French be extended to the elementary grades. Three large urban school systems are presently experimenting with courses in French at the Division II level. There are indications of similar experiments being carried on in a somewhat less formal manner in other school systems of Alberta. The



minutes of the November 16, 1959 meeting of the Elementary School Curriculum Committee contain reference to a lengthy discussion of the objectives, the desirability and the present status of teaching French in the elementary grades of Alberta schools. Although no committee has been established for the purpose of studying the problem, the Elementary School Curriculum Committee is alert to developments. The Royal Commission on Education in Alberta,<sup>1</sup> has made a specific recommendation favoring the offering of a second language at grades below the senior high school level.

Teaching a second language to English-speaking children appears to be receiving an increasing amount of attention in the other nine provinces of Canada. A brief review of the 1958 and 1959 issues of *News Letter* and *Canadian Education*, both publications of the Canadian Education Association, reveals that many school systems in Canada either have instituted the teaching of a second language in Grades I-IV and/or Grades VII-IX or are experimenting with such a program. A meeting of urban superintendents held during the Canadian Education Association Convention in September 1958 in Victoria, British Columbia, heard reports of teaching French at levels below Grade X in the following centers across Canada: London, Etobidoke, Victoria, Saskatoon, Winnipeg, Halifax, South Peel, Moncton, Vancouver and Ottawa. One resolution passed at the Canadian Conference on Education held in Ottawa during February 1958, refers to the desirability of "... the introduction of French (or English in French-speaking schools) in elementary grades at an early age."

### *Limitations of the Study*

This study is not concerned with second language programs in bilingual schools, in Department of National Defense schools, or in private schools; neither is it concerned with English programs for French-speaking children in the province of Quebec. The study is limited to a consideration of the problems of the administration of a second-language program in Grades One through Nine and does not attempt to discuss methodology, instructional materials and teaching techniques. A further limitation results from the nature of the professional literature related to this topic. Research evidence is lacking to such a degree that a review provides only a summary of practice and opinion.

### *Definition of Terms*

By second language is meant any language other than English. Grade One through Nine means the first nine grades in school excluding kindergarten. By English-speaking children is meant those

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<sup>1</sup>Report of the Royal Commission on Education in Alberta, 1959.

children who attend school where the language of instruction is English. Other terms used to designate grade levels are Division One (Grades One, Two, Three), Division Two (Grades Four, Five, Six), Elementary School (Grades One through Six), Junior High School (Grades Seven through Nine), Senior High School (Grades Ten through Twelve or Thirteen).

### Procedure

#### *Plan of the Study*

Two questionnaires were used in this study. An open-ended type of questionnaire was developed and forwarded for completion to the director of curriculum in the Department of Education in each of Canada's ten provinces. The questionnaire was designed to obtain information relative to the following:

1. The responsibility of each of the following authorities with respect to teaching a second language in Grades I through IX.
  - a. Department of Education
  - b. School System (Board of Education)
  - c. School (principal and staff)
2. Regulations (either by statute or otherwise of the Department of Education) with respect to the following:
  - a. Languages taught
  - b. Teacher qualifications
  - c. Grades included
  - d. Selection of pupils
  - e. Articulation of the program
  - f. Present status of the program
3. The names of school systems in the province where second language programs are offered in Grades I-VI and/or Grades VII-IX.
4. Copies of provincial publications available to the teachers of second languages in elementary and junior high school grades.

Completed questionnaires were returned by the ten directors of curriculum.

Following receipt of these completed questionnaires, a second questionnaire, very similar to the first, was designed and forwarded to sixty school systems across Canada which had been listed by the directors of curriculum as centers where programs, either experimental or reasonably well established, were in existence. This instrument was designed to obtain information concerning the following:

1. The objectives of teaching a second language in elementary and junior high school

2. The problems of introducing and maintaining such a program as they relate to
  - a. Teacher supply
  - b. Cost
  - c. Instruction time
  - d. Selection of pupils
  - e. Articulation
3. What second languages are being taught?
4. In what grades are these languages taught?
5. What plans, if any, does the system have for introducing such a program, extending a program presently in operation, or curtailing the present program if one is presently operating?

Thirty-eight questionnaires were completed and returned which represented 63 per cent of the number distributed.

Both the questionnaire forwarded to the directors of curriculum and the questionnaire forwarded to school systems were developed on the basis of what appeared to be the most frequently recurring topics found in the literature related to second language programs in Grades I-IX.

The completed questionnaires from directors of curriculum and school systems were analyzed to determine what practices appeared to be most acceptable in Canada in terms of meeting the problems inherent in second language programs in Grades I through IX as outlined immediately above.

### Findings

1. *Responsibility of each of the following authorities with respect to second language programs (a) Department of Education, (b) School systems, and (c) School.*

- (a) Choice of language. In six of Canada's provinces the decision as to what language shall be taught resides with the Department of Education. In three provinces a choice may be made locally from an approved list supplied by the Department of Education. In only one province is there unrestricted local choice.
- (b) Setting the curriculum. In the provinces of Canada where second language programs are required or permitted the responsibility for developing the curriculum rests largely with the Department of Education, although there are indications that local authorities may adjust the curriculum to local needs. Only in two provinces where the program is permitted are local school systems allowed to develop their own curriculum. Curriculum development in experi-



mental programs appears to be a cooperative venture with the central authority giving guidance and assistance to the local system.

- (c) Setting standards of teacher qualifications. Where programs are required the setting of standards of teacher qualification is almost exclusively the prerogative of the central authority. In only one province is local authority granted. When it is remembered that the chief qualification required other than a certificate is fluency, it seems probable that evaluation of this ability may be the responsibility of local systems. Where programs are permitted the setting of standards of teacher qualifications is left to the local school system.

2. *Objectives of the program.* Second language programs in elementary and junior high school grades, whether required or permitted by the Department of Education, seem to stress the same general objectives. The programs of study of the various provinces reveal the following objectives are the most common ones:

The development of

- (a) Ability to understand and to speak the language
- (b) Ability to read and to write the language

Not so frequently stated are two other objectives:

- (c) A good basis for the study of a second language in high school
- (d) An interest in another language and in the history, life and contributions of another culture.

In all programs there is an emphasis on the aural-oral approach for about the first two years, following which written work is also stressed.

Local systems gave the following reasons, listed in the order of frequency, for establishing second language programs: bilingual community, cultural, enrichment for superior pupils, community pressures, recently discovered knowledge about learning a second language early in life, and experimental purposes.

3. *Languages taught.* French is the most frequently taught second language in elementary and junior high school grades in Canadian schools. Where Spanish, German, or Latin is the second language chosen, it usually appears in the high school program. These conditions appear to hold true regardless of whether the central or local authority makes the decisions as to which language shall be taught and regardless of whether the program is required or permitted by central or local authorities.

4. *Qualifications of teachers.* In addition to regular certification, fluency in the second language is the most frequently required qualification of the teacher. Special certification is not required in

any province and special courses in addition to regular certification were referred to in only two provinces. Qualifications required of teachers seem to be about the same whether programs are required or permitted.

5. *Types of teachers.* Second language programs in Canada utilize the services of the regular classroom teacher, the specialist and the part-time teacher. Of these three sources the regular classroom teacher is the most frequent choice, particularly at the elementary level. There is a greater tendency to use the services of a specialist in the junior high school grades. Part-time teachers are frequently used in both the elementary and junior high school grades.

6. *Grades included in the program.* Of the four provinces of Canada in which a second language is required, one province requires it in elementary school (Grades III-VI), one requires it in Grades VII-IX and two require it in Grade IX. In addition, each of these four provinces permits a second language in grades below those in which a second language is required. Six provinces permit the program in elementary school, the other five limit it to junior high school. It would seem that the majority of second language programs in Canada are at the junior high school level but there are strong indications of extensive experimentation at the elementary school level as well as a tendency to extend existing programs downward through the grades.

7. *Pupil selection.* Second language programs in elementary and junior high school seem to have a slight tendency to be selective in nature rather than elective, while compulsory programs are considerably less popular. Even in the four provinces where a second language program is required, selective and elective programs are also in existence. Where selection is required, the criteria used are always of an academic nature, such as scholastic ability, academic achievement, and I.Q.

8. *Time allotment.* There appears to be a tendency for slightly more time to be spent on instruction where programs are required by the Department of Education than where they are not. The average time for both required and permitted programs is approximately:

- 65 minutes per week in Division I
- 100 minutes per week in Division II
- 135 minutes per week in junior high school.

Instruction is usually given during regular school hours. No clearly defined answer was given to how the necessary time was found in the curriculum for the addition of a second language program. Presumably this might be a matter of scheduling of subjects at the



junior high school level where the program is elective. One can only assume that this problem has been met at the elementary level in a variety of ways, depending on the individual teacher.

9. *Articulation.* With the exception of one province (Quebec) where there is a compulsory program from Grades III to IX, there is not a continuous program through elementary and junior high school. Where elective or selective programs exist, or where experimentation is being carried on, articulation is one of the major concerns.

10. *Administrative problems.* The most frequently mentioned administrative problems are an adequate supply of qualified teachers and the articulation of the program. Other problems mentioned included development of curriculum and selection of students.

### Conclusions

1. The position which the United States and Canada have been forced to assume in international affairs has made many statesmen, educationists, and laymen aware of their need to understand other peoples, their languages and their cultures. The awareness of this need has been a strong motivating force in the development of second programs.

2. Research concerning the age at which children can most readily learn a second language has exerted considerable influence on the development of second language programs, particularly in the elementary school.

3. The recently developed emphasis on differentiation of instruction has caused some people to look to second language programs as a suitable course of enrichment for superior children.

4. Dissatisfaction with the achievements of many students in existing secondary school language programs, particularly with respect to their ability to understand and to speak the language, has caused serious doubts as to how adequately a second language can be learned in three years of high school.

5. There is insufficient research evidence on which to base a decision concerning the contribution that the study of second languages can make to the elementary and/or junior high school program.

6. Public interest in second language programs has created a situation which demands the attention and consideration of local authorities, Departments of Education, and Faculties of Education. In spite of the lack of research evidence as to what is actually accomplished by second language programs, they are being developed and will possibly increase in number as time goes on.



7. The long established programs in the United States and Canada are largely those which have been designed to:

- (a) meet the needs of bilingual communities, or
- (b) enrich the curriculum for superior pupils

8. Most provinces in Canada are experiencing an increased activity and interest in second language programs for elementary and junior high school grades.

9. Second language programs in Canada are being developed largely through the initiative of local school systems with varying degrees of assistance, encouragement, and guidance from the Department of Education.

10. Second language programs being developed in Canada have encountered the following major administrative difficulties:

- (a) a shortage of adequately qualified teachers
- (b) articulation of the program

which also appear to be major administrative problems of similar programs in the United States.

### **Recommendations**

1. Second language programs in elementary and junior high school should be permitted by the central authority, but not required.

2. Local school systems should accept considerable responsibility for developing second language programs, particularly during the experimental period.

3. School systems should give very careful and thorough study to all the implications of introducing a second language program in elementary and junior high school before taking any definite action.

4. Local school systems which plan to introduce second language programs should accept the following responsibilities:

- (a) to develop objectives for the program which are acceptable to both the professional staff and to the general public
- (b) to develop a long-range plan for the program in terms of an adequate supply of teachers, a satisfactory means of articulating the program, and a plan for financing the additional costs resulting from the program.
- (c) to institute and maintain an extensive program of in-service education with teachers who are required to teach second language programs
- (d) to make careful and regular evaluation of the program in terms of the stated objectives.

5. Departments of Education and/or teacher training institutions should give leadership to local systems in developing second language programs in the following ways:

- (a) by establishing committees for the purpose of studying existing programs, reviewing the current professional literature and providing to school systems some general guideline to assist in developing programs
- (b) by providing resource people to assist local systems in developing programs
- (c) by developing teacher training courses which will qualify teachers to accept the added responsibilities of second language programs.

6. Where a second language program is established in a bilingual community, school systems should seriously consider the advisability of making the program available to all pupils.

7. Where a second language program is established in a community in which there is no minority ethnic group, consideration should be given to making the program a source of enrichment for superior pupils.

8. The second language program in elementary and/or junior high school should form a part of a continuous language program which covers at least six years of study.

9. The possibilities of using television for the instruction of both pupils and teachers in second language programs should be thoroughly explored.

# REALISM OF EDUCATIONAL AND VOCATIONAL CHOICES AT GRADE NINE

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One of the fundamental functions of counselling and group guidance at grade nine is to assist students to make realistic educational and vocational choices. Educators have sought to measure the extent to which counselling and group vocational guidance may contribute to this end. For present purposes, three criteria, namely: stability, compatibility and permanence were accepted as the criteria of realism. The findings of the study suggest the superiority of both group guidance and counselling over either one of these two procedures alone. The evidence indicates also that, in ranking at least, the sequencing of group guidance first and then counselling has advantages over the opposite sequencing or the combination of these two procedures.

Yet the evidence presented is not clearly definitive since other patterns of sequencing did themselves show considerable gains in establishing educational and vocational realism. A decline in realism from that found in grade nine was noted when the students proceeded to grade ten. There is a need for more definitive and precise studies in this field before firm conclusions can be reached.

## **The Nature of the Problem**

Counselling and vocational group guidance are comparatively recent additions to junior high schools in Alberta.\* Although these services are now being offered in many junior high schools, specific research is necessary to evaluate the results and to provide data upon which to base improvement.

Until the introduction of specialized guidance, counselling of grade nine students on course and vocational choices was largely an incidental service provided by teachers and principals. The ever increasing complexity of the occupational scene, with a corresponding increase in complexity of senior high school curricula, has necessitated that haphazard course placement and vocational guidance be replaced with specialized and directed services.

In order that such services may provide the maximum benefit to students, it is necessary to know the extent to which guidance affects students' course and vocational choices. Thus modifications

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\*Counselling as a specialized service, was introduced into junior high schools of Alberta in 1947.



in techniques and types of service may be developed, based on clearly defined goals and supported by the knowledge that student needs are being met. This study was intended to explore the influence of counselling and group guidance procedures alone and in sequence on the realism of grade nine students' educational and vocational choices.

Careful analysis of junior high school performance is necessary in helping students to make wise and realistic choices in grade ten. For example, students with lower than "B" gradings are particularly in need of guidance sufficiently early in the grade nine year to enable them to improve gradings if possible to the level that serious restrictions will not be placed on grade ten choices and to assist them to choose courses in line with their abilities.

Furthermore, the increasing complexity of today's society has intensified the need for specialized educational and vocational guidance. The range of choice both of educational and vocational opportunity is bewildering to students, especially those of grade nine who are faced with the crucial choices required at this level.

To provide increasingly sound and realistic counselling and group guidance, it is necessary that guidance workers evaluate existing services to determine their effectiveness. Major studies, which have been made in this field, have not seemed fully applicable to the educational course and vocational counselling of junior high school students in Alberta schools. This study then, aims to fill a definite need for local research into the effectiveness of counselling and group guidance in an Alberta junior high school situation.

### Criteria

Three criteria of realism are used namely permanence, stability and compatability of educational course and vocational choice.

Permanence of choice refers to the degree to which vocational and educational course choices remain unchanged throughout group guidance and individual counselling processes. Stability refers to the consistency of choice between those made at counselling interviews and choices made at phase points. Compatability of choice is the consistency of the educational program choice with the student's stated vocational choice.

### Limitations

The design of the study was constructed to examine realism of choice during a certain specific period of time, namely during a twelve week period in the second term of the grade nine school year, and then a year later in April of the following school year.

Despite the fact that twelve weeks is a comparatively short period in the students' lives, it is a vital period since it is at this

time that students must make choices concerning high school courses. It is at this point that they make crucial decisions relative to their future educational and vocational plans. Thus the limitation of the shortness of the experimental period is, to some extent, negated by the crucial decisions of this period.

A second limitation relates to factors other than counselling that might have operated to affect changes in students' choices. The main variables, those relating to group guidance and counselling have been identified and controlled to a large extent. Such factors as the influence of parents, siblings or friends and the influence of classroom instruction remain largely as uncontrolled variables. However, counsellors were conversant with these influences and took them into consideration when counselling students.

### Design of the Experiment

The design of this study was constructed to compare first, the effects of counselling, group guidance, and no counselling or group guidance on educational course and vocational choices using the three realism criteria over a short treatment period. Secondly, to examine the influence of different phasing of counselling and group guidance on realism of choice over a longer period.

TABLE I

#### EXPERIMENTAL PHASES OF COUNSELLING AND GROUP GUIDANCE TREATMENT

Group	Time	Phases	Treatment	Code	Code Key
A	First 6 weeks	P1-P2	Group Guidance	GO	Group guidance only
	Second 6 weeks	P2-P3	Counselling	CO	No special treatment
	One year	P3-P4	No Treatment	XT	Counselling only
B	First 6 weeks	P1-P2	Counselling	CO	
	Second 6 weeks	P2-P3	Group Guidance	GO	
	One year	P3-P4	No treatment	XT	
C	First 6 weeks	P1-P2	No treatment	XT	No treatment
	Second 6 weeks	P2-P3	Counselling and Group Guidance	CG	Counselling Group Guidance
	One year	P3-P4		XT	

Tabulation of choices was made at the following five points:

- (1) Before treatment of any kind was given (called P1).
- (2) At the end of the first treatment period (P2).
- (3) At the end of the second treatment period (P3).
- (4) At April of grade ten year (P4).
- (5) At the counselling interviews: course (c) and vocational choices (v).

Group guidance means instruction in Unit IX—Education and Work in Alberta of the grade nine Health and Personal Development course.

### Method of Analysis

Realism of educational and vocational choices is expressed in terms of the criteria. To provide a basis of comparison, criteria are

expressed in terms of ratio computed as percentage scores. Variations of realism of choice may range from one hundred per cent, or perfect realism, to zero per cent or complete lack of realism.

The method of analysis is directed toward detecting differences in realism among three groups at different phases of treatment. The comparisons are done for each of the four educational choice categories: matriculation, commercial, technical and "no choice" categories. The comparisons for each educational course pattern are made for each of the three criteria.

TABLE II  
PERMANENCE OF COURSE AND VOCATIONAL CHOICES  
IN PERCENTAGE SCORES AT SELECTED POINTS  
DURING THE EXPERIMENTAL PERIOD

Treatment Period	Treatment	Experimental Group	Matric.	Comm.	Tech.	Gen.	No Choice
			C* V†	C V	C V	C V	C V
First P1 to P2	GO	A	80 83	90 71	64 20	33 /	47 65
	CO	B	94 97	83 80	80 0	/ /	18 48
	XT	C	92 82	82 88	83 100	/ /	39 56
Second P2 to P3	CO	A	93 93	80 83	75 75	50 /	16 64
	GO	B	94 85	60 43	57 100	0 /	0 35
	CG	C	94 86	54 67	44 43	0 /	20 69
Third P3 to P4	XT	A	86 77	50 73	27 0	0 /	0 48
	XT	B	92 86	91 83	16 8	0 /	0 30
	XT	C	84 80	44 50	38 43	/ /	0 29

\*Course choice

†Vocational choice

### Summary

In the matriculation category groups showed a high degree of permanence of educational course choice.

All groups were slightly less permanent in educational course choice upon entrance to senior high school.

Vocational permanence in the matriculation group followed a similar pattern to that of educational choice.

The high compatibility scores of matriculation students might indicate that, generally, students understand what matriculation



means and are choosing their life's work accordingly. The three periods of greatest uncertainty are: 1. before any treatment 2. when receiving group guidance after counselling 3. upon entering senior high school.

It would seem logical that before counselling or group guidance grade nine students would be uncertain of their educational and vocational choices. The decrease of compatibility during group guidance may be due to the general nature of vocational instruction received in grade nine. Therefore, the specific requirements and educational background information necessary for choosing a specific field of work may be lacking in the case of many students who have made incompatible choices. The difference between studying and planning for a career and simply having aspirations towards entering a career may not be made clear to such students by group guidance instruction.

TABLE III  
STABILITY OF COURSE AND VOCATIONAL CHOICES  
COMPARED WITH CHOICES MADE AT COUNSELLING  
INTERVIEW (PERCENTAGE SCORES)

Treatment Period	Treatment	Group	Matric.	Comm.	Tech.	Gen.	No Choice
			C* V†	C V	C V	C V	C V
AT P1	XT	A	73 88	49 50	57 0	0 /	7 62
	XT	B	68 85	66 83	83 100	/ /	0 55
	XT	C	50 81	79 82	66 33	/ /	3 29
Phase 1 P1 to P2	GO	A	71 91	80 86	66 100	0 /	7 64
	CO	B	98 90	88 83	50 100	0 /	100 79
	XT	C	73 90	79 91	100 77	/ /	6 31
Phase 2 P2 to P3	CO	A	90 93	95 93	62 75	0 /	33 81
	GO	B	96 95	77 100	100 0	0 /	40 72
	CG	C	96 98	64 91	88 77	/ /	20 36
Phase 3	XT	A	95 91	63 93	88 100	0 /	0 100
	XT	B	98 95	77 50	66 0	/ /	0 64
	XT	C	92 95	57 72	66 55	/ /	0 83

\*Course choice  
†Vocational choice

TABLE IV  
PER CENT COMPATABILITY OF EDUCATIONAL AND  
VOCATIONAL CHOICES BY TREATMENT PERIODS

Period of Treatment	Treatment	Group	Matric.	Comm.	Tech.	No Choice
Before Treatment (at P1)	XT	A	96	70	71	55
	XT	B	94	83	40	97
	XT	C	73	88	50	90
First Period (P1 to P2)	GO	A	96	80	33	56
	CO	B	96	70	29	29
	XT	C	95	92	77	94
Second Period (P2 to P3)	CO	A	95	75	27	16
	GO	B	84	55	50	20
	CG	C	80	90	87	35
Third Period (P3 tot P4)	XT	A	77	92	57	0
	XT	B	89	82	80	0
	XT	C	98	100	83	0

However, regardless of treatment during the experimental period, all students by the end of the treatment period were comparatively at the same level in their educational choices— all students having made an educational choice.

Although some students had not made vocational choices at the end of treatment, those vocational choices which had been made, were generally compatible with educational choices.

To achieve this degree of realism, evidence in the study suggests the following:

(a) If vocational guidance instruction is given before counselling, there is evidence of considerable change toward realism of choice. This is shown in Table III.

(b) Percentage increases of stability ranging in groups from three percentage points to one-hundred points were noted. However, when counselling is given, following group vocational instruction, it generally results in a further strengthening of realism of choice. In permanence, the range of increase is from ten to fifty-five per cent and in stability the range is from seven to fifteen per cent increase.

(c) When counselling precedes group guidance, there is slight evidence of changing choices toward greater realism during group guidance. In fact there is evidence of decrease of realism in permanence and some evidence of decreasing realism of stability of choice while receiving group vocational guidance.

(d) During the experimental period the group receiving no treatment in the first phase showed considerable evidence of moving toward realism of choice. This phenomenon might be explained on the basis that most students are acutely aware of the fact that their school mates are receiving certain kinds of treatment and they are influenced by this fact. In this study, the choices made during "no treatment" phases may also have been influenced by information regarding the counselling interviews and group guidance some of which undoubtedly may have been passed among the grade nine students involved in the experiment. However, there seems to be evidence in the experiment that the movement toward making educational course and vocational choices was considerably accelerated when counselling was received following a "no treatment" period.

Further study of the data leads to the following conclusions:

1. Evidence seems to indicate that counselling exerts a stronger influence on grade nine students toward stability of matriculation choices than does group guidance.

2. Upon entrance into senior high school, all groups show some evidence of decreased permanence, stability and compatibility. It seems likely that the change of educational environment may have helped to create this situation. A second factor causing decrease of permanence and stability at high school entrance results from failure and dropouts at this time.

3. The fact that a fairly large percentage of students' vocational choices fall in the "no choice" category, even in senior high school, is of significance. The uncertainty that some students in all groups seem to show in regard to making vocational choices may be indicative of lack of emphasis on vocational instruction by counsellors, teachers and administrators.

### Conclusions and Implications

This study sought to explore the influence of group guidance and counselling procedures, alone and in sequence, on the realism of the educational and vocational choices of grade nine students. To this end the following hypotheses were examined:

- (1) that as a result of a combined group guidance-counselling guidance program, more realistic educational and vocational choices will result than by either group guidance or counselling procedures alone;



(2) that the sequence of a group guidance-counselling process is such that greater realism of educational and vocational choice will be achieved by placing group guidance procedures before counselling in preference to the opposite sequence or to the simultaneous conduct of the two procedures;

(3) that realism of educational and vocational choices of grade nine students will continue into the senior high school program.

The data would suggest first that both counselling and group guidance procedures are better than either procedure alone. Further, while all groups at the end of the experimental grade nine period of the study showed equivalent stability and permanence having had both group guidance and counselling, the data seemed to suggest that the phasing: group guidance and then counselling, had advantages over the reverse sequence and also that the former phasing had advantages over group guidance and counselling given simultaneously. Further, the data seemed to suggest that group guidance procedures tended to produce a lack of stability of realism which could best be reestablished by counselling.

The third hypothesis, that of continued realism into grade ten remains open to question. It was found that in many instances such realism was maintained. However, the nature of the high school program, with the cultural prestige of the matriculation program together with the effect of the failures and dropouts at grade nine, tended to undo some of the realism achieved at the grade nine level.

The implications of the findings of the study, which are at best suggestive only of trends, are as follows:

1. The group vocational guidance program should precede counselling. This could be established on an a priori basis in that the group vocational guidance program itself introduces the student to wide numbers of opportunities available to him. This, by its very nature, would cause instability or lack of permanence of realism. Subsequently, in the counselling situation, the student with his counsellors, can explore with greater meaning the opportunities available. On the other hand, the evidence of this study is not sufficiently conclusive to establish the superiority of the above sequence inasmuch as major gains were made by alternate sequencing.

2. This study has not been other than exploratory in nature and has sought only to suggest critical areas in the field outlined. There is a need for more precise and demanding statistical evaluations. Obviously, more rigid control of the experimental variables for a larger and more diverse sampling in a wide variety of schools is a logical next step.

# THE PREDICTION OF ACADEMIC ACHIEVEMENT OF SUPERIOR GRADE THREE PUPILS

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## The Problem

Confidence has been expressed in the ability of the school to predict, with instruments currently available, the achievement of its promising children (16). Russell (21) urges early implementation of testing programs for this purpose. The present study compared three intelligence tests as predictors of achievement of superior grade three pupils.

The importance of intelligence tests in measurement of the pupils' ability has long been recognized. Coefficients of correlation ranging from .40 to .60 have been found in numerous studies of the relationship between IQ and school marks (13). Despite the influence on academic achievement of such factors as motivation, time devoted to study, physical and emotional traits and environmental influences, Terman (22) in 1947 was able to reaffirm his contention of thirty years earlier that the IQ is one of the most important things that can be learned about a child.

Identification of the gifted pupil and prediction of achievement are matters of immediate concern today. Adequate training of superior pupils is increasingly necessary to meet the growing needs of society, particularly in technological fields. The school is under "constant criticism for its apparent failure to provide for children of special ability and to challenge these pupils to greater effort" (12). Passow (17) and Laycock (15) deplore the detrimental effect on the nation's manpower of failure to discover its talented youth. Although special school programs for superior pupils have been in operation since 1915 and earlier (19), interest in the problems of the gifted has generally lagged behind concern for pupils of low ability. Renewed interest in the former group is evident today.

## Related Studies

Burt (6) concluded that intelligence is the predominant constituent of educational ability. In a comparison of intelligence tests and achievement tests, Richardson (20) found the intelligence test to be the best single predictor of future success. Alexander (1), in a study of teacher judgments and intelligence tests obtained the results shown in Table I. Teacher judgments were found to agree with classification by a standardized intelligence test only 58% of the time.

TABLE I

INTELLIGENCE RATING BY TEACHER JUDGMENTS AND  
BY A STANDARDIZED INTELLIGENCE TEST

(Alexander, 1953)

Intelligence Category	Teacher Ratings	Number of Teacher Ratings Confirmed by Test
Among the five highest .....	199	114 or 57.3%
Among the five lowest .....	185	107 or 57.8%
	384	221 or 57.6%

N=1,030

With respect to teacher-made tests as predictors, it has been found (7) that their reliability is lowered by the influence of personal factors. In the case of standardized achievement tests, however, prediction is improved over the use of intelligence tests alone (18). The inadequacy of chronological age in prediction of achievement is indicated by the finding of a committee on promotion policies in Alberta in 1954 that 17.6% of Alberta pupils from grades one to eight were over-age for their grades.

Coefficients of correlation obtained by Bond (10) are reported in Table II as an example of prediction studies which indicate a marked relationship between intelligence and achievement.

TABLE II

CORRELATION OF ACHIEVEMENT WITH THE  
STANFORD-BINET INTELLIGENCE TEST (Bond, 1940)

Subject	Correlation with the Stanford Binet Intelligence Test
Reading vocabulary .....	.79
Reading comprehension .....	.73
Literary acquaintance .....	.60
English usage .....	.59
History .....	.59
Biology .....	.54
Geometry .....	.48
Spelling .....	.46

The variation among subjects in effectiveness of prediction is consistent with the findings of Burt (10), Gates and Jersild (10) and others.

Peel and Rutter (18) found one intelligence test to be superior to any other single predictor of success in grammar schools. Climenhaga (8) and Gavinchuk (11) both found a substantial relationship between intelligence and achievement at the junior



high school level; the latter reported that no one intelligence test was consistently superior to the others investigated. The majority of prediction studies which are reported dealt with non-selective populations. Very small coefficients were obtained by Wrigley (24) and by Bishton in studies of gifted pupils, "the most extreme deviates on a continuous scale in matters of social, psychological, and educational growth and development." (5).

Barrett and Baumgarten (4) pointed to the characteristic high verbal ability of achievers and the difficulty of obtaining from many tests an adequate measure of intelligence of pupils who have difficulty with verbal symbolism. Evidence for the predictive value of the performance types of intelligence tests is presented by Barrett (3).

Bailey (2) used several of the same instruments as were employed in this study. It was found that the Detroit Beginning First-Grade test correlated more highly with the Stanford-Binet (.81) than did the California Test of Mental Maturity (.58). The latter was found to be lacking in discrimination among the more capable pupils.

### Design

#### *Data*

Information regarding superior pupils was obtained from the results of a survey of Edmonton grade three pupils which was conducted by the Division of Educational Psychology in June, 1956. On the basis of 120 or higher on the California Test of Mental Maturity, a sample of 178 was selected from a grade three population of some 3,700. This study made use of scores on three intelligence tests and scores in total achievement and in reading, language and arithmetic.

#### *Testing instruments*

The three intelligence tests employed were the Detroit Beginning First-Grade Intelligence Test, the California Short-Form Test of Mental Maturity and Raven's Progressive Matrices. The familiar 1937 revision of the Detroit test, first published in 1921, had been administered at the beginning of grade one. The California Test of Mental Maturity, while it has been criticized for over-emphasis of its sub-scores, is rated by Kuhlman (14) and by others as one of the best on the market. The Progressive Matrices is a non-verbal test. It is designed to measure Spearman's *g*, a factor of intelligence entering into all test situations, and it is intended to be wholly culture-free and independent of even elementary education. Scores on the Primary Battery of the California Achievement Tests, which had been administered at the same time as the California and the

Progressive Matrices intelligence tests, were used as criteria of achievement. Although the battery does not escape the criticism of lack of logical validity, this (fourth) edition of Tieg and Clark's well-known achievement tests has been described by Witty (23) as having no equal as a survey instrument.

Procedure

Each of the four achievement scores was compared with each of the three intelligence test scores to determine the degree of relationship, if any, between achievement and intelligence. Product-moment coefficients of correlation were calculated. Significance of coefficients obtained was tested against the null hypothesis and where the coefficients were sufficiently large to warrant the claim of a real relationship between the variables, the degree of confidence in such relationship was noted. Intercorrelations of the intelligence tests were also obtained.

Findings

Intelligence and total achievement

Table III shows the coefficients obtained for intelligence tests and total achievement.

TABLE III  
RELATIONSHIP BETWEEN INTELLIGENCE AND  
TOTAL ACHIEVEMENT

Intelligence Test	N	r	Level of significance
Detroit Beginning First-Grade .....	178	.33	.01
Progressive Matrices .....	178	.34	.01
California Test of Mental Maturity .....	178	.16	.05

While positive r's were obtained, significant at either the .01 or .05 level, they are small as compared with coefficients usually found between achievement and intelligence. Lack of variability of the sample accounts for this fact.

In the absence of a completely satisfactory test of significance of differences of r's, the following formula, applicable to correlated r's was used:

$$t = \frac{(r_{12} - r_{13}) \sqrt{(N - 3) (1 + r_{23})}}{\sqrt{2 (1 - r_{12}^2 - r_{13}^2 r_{23} + 2 r_{12} r_{13} r_{23})}} \tag{9}$$

As it use also implies random selection of the sample, this test of t may be regarded as a non-conclusive but nevertheless valuable indication of significance of differences. The highest t-value thus ob-

tained was 1.90 which falls short of the t-table figure of 1.97 required at the .05 level to claim significant departure from zero.

With the reservations stated it may be said that the Progressive Matrices and the Detroit proved to be the best predictors of total achievement of superior pupils. The figure obtained for the latter, almost as high as for the Matrices in spite of its time lag, speaks well for its effectiveness.

*Intelligence and reading*

Reading scores from the achievement test battery are a composite of achievement in vocabulary and in comprehension. Of special interest here is the highly verbal nature of the California test and, to a lesser degree, of the Detroit, as compared with the non-verbal Progressive Matrices. The results of correlation of the three scores with reading scores are shown in Table IV.

TABLE IV  
RELATIONSHIP BETWEEN INTELLIGENCE AND  
READING ACHIEVEMENT

Intelligence Test	N	r	Level of significance
Detroit Beginning First-Grade .....	178	.22	.01
Progressive Matrices .....	178	.27	.01
California Test of Mental Maturity .....	178	.09	*

\*Not significant

Of the coefficients of correlation, all positive, two were found to be slightly lower and one considerably lower than in the case of total achievement. The Progressive Matrices and the Detroit, in that order, ranked as the best predictors. This conclusion is subject to the same reservation as was observed with respect to total achievement, since the t-values calculated were too low to claim significance of differences of r's. No real relationship was found to exist between reading and the California test.

*Intelligence and language*

The language scores are, again, made up of several sub-scores, English (capitalization and punctuation) and spelling.

As shown in Table V, positive r's were obtained for all three intelligence tests. The coefficients for the Detroit and the Matrices are lower than those found for total achievement but somewhat above the reading coefficients. Both are again significant at the .01 level while the .08 figure for the California is not. A greater degree of confidence is possible in claiming superiority of the first



two tests over the California as t-values of 2.49 and 2.04 respectively were obtained, indicating significance of differences at the .05 level. Contrary to the results of the two previous sections, the Detroit ranked above the Matrices.

TABLE V  
RELATIONSHIP BETWEEN INTELLIGENCE AND  
LANGUAGE ACHIEVEMENT

Intelligence Test	N	r	Level of significance
Detroit Beginning First-Grade .....	178	.32	.01
Progressive Matrices .....	178	.28	.01
California Test of Mental Maturity .....	178	.08	*

\*Not significant

*Intelligence and arithmetic*

The results of correlation of intelligence test scores and arithmetic scores are shown in Table VI.

TABLE VI  
RELATION BETWEEN INTELLIGENCE AND  
ARITHMETIC ACHIEVEMENT

Intelligence Test	N	r	Level of significance
Detroit Beginning First-Grade .....	178	.36	.01
Progressive Matrices .....	178	.36	.01
California Test of Mental Maturity .....	178	.20	.01

In this area the Detroit and the Progressive Matrices were found to be equal as predictors and both ranked above the California. The coefficients of .36 found here were the highest obtained in the study. As in the case of total achievement and reading, t-tests failed to demonstate significance of differences of r's.

*Intercorrlations of intelligence tests*

As correlations of group tests with the Stanford-Binet are reported as evidence of their validity, so intercorrelations among group tests indicate the extent to which they measure the same aspect of intelligence. In comparing the three intelligence tests used in this study, the sub-scores of the California in language and non-language were included. Of the r's shown in Table VII, only the .19 between the Detroit and the Matrices was found to be significant at the .05 level. The others were so small as to be attributable to

chance. It is of interest to note that the tests yielding the  $r$  of .19 were the Detroit, involving language, and the language-free Matrices, while no significance relationship was found between the Detroit and either the California or its language score which contributes largely to the total. The two tests showing a significant correlation are the two which had previously been indicated as the best predictors of achievement in the various areas.

TABLE VII  
INTERCORRELATIONS OF INTELLIGENCE TESTS

	Progressive Matrices	California Total	California Language	California Non-language
Detroit .....	.19	.09	.11	.05
Progressive Matrices ...	.....	.10	.06	.10

Summary and Conclusions

1. The Detroit Beginning First-Grade Intelligence Test and the Progressive Matrices were found to be the best predictors of total achievement and achievement in reading, language and arithmetic. The former was slightly superior in prediction of language, equal to the Matrices in arithmetic and slightly inferior with respect to total and reading achievement.
2. The highest coefficient for the California was found in prediction of arithmetic achievement. No real relationship was found to exist between the California and achievement in reading or language.
3. Intercorrelations of the intelligence tests produced a significant coefficient in only one instance, namely between the Detroit and the Matrices. Failure to find significant correlation of the California with either of the other two intelligence tests may be due, in part, to differences in discriminatory power among superior pupils.
4. The lapse of time between the administration of the Detroit test and the measurement of achievement is additional evidence of the value of this instrument.
5. The highly non-verbal Progressive Matrices was found to be superior in prediction of achievement, including language, to the California Test of Mental Maturity which is highly dependent on language facility. This suggests that mental ability, or  $g$ , as measured by the Progressive Matrices, is more closely related to achievement of superior pupils than are the scores of the California.



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# AN ANALYSIS OF THE CALGARY LAGGARD POLICY

ARTHUR G McFAUL

Since the end of the Second World War, the population of Calgary high schools has rapidly increased. The large group of students which society has placed in our secondary schools contains many who are resistant to the educative process. Despite all efforts of the school, these indifferent students do not appear able to adjust to the school situation, and may disrupt the academic experiences of other students.

Conscious of the bad effect the resistant student was having on the academic progress of the serious student, Calgary high school principals, in 1953, recommended to the Calgary School Board application of Sections 179 and 369 of the Alberta School Act. Section 179 grants the board the power to make regulations for the management of the school, and to exclude from school students who are guilty of habitual neglect of duty. Section 369 grants this power to the principal and teacher, and establishes the method by which such exclusion will take place.

Upon the recommendation of the high school principals, the Calgary School Board stated its policy, which with amendments now reads:

A high school student is entitled to education at public expense provided he puts forth a serious effort to profit from that education. In 1953 the per pupil cost for high school education in Calgary was \$320.63 and there was difficulty in finding accommodation for all who sought admission. The public cannot afford to provide such service to pupils who take an indifferent attitude toward their responsibility in providing a good return on this investment.

In implementing the above policy the following statements will apply:

1. Our concern is not so much with the pupils who try hard but are unable to succeed as with those who *simply fail to put forth an effort*.
2. Such pupils can be identified rather early and should be referred to guidance counsellors for consideration. It is expected that they should be known by the first reporting period, that is, on or before November 15th.
3. Parents should be made aware of the problem as soon as possible after this date either by letter or personal interview.
4. The principal should advise the parent on or before January 15th that the pupil will not be permitted to remain in school after February 14th unless his effort has improved.
5. On February 10th a letter shall go from the principal to the parent advising of the enforced withdrawal of the pupil as of February 14th.
6. At the same time the principal shall send to the Superintendent a list of all pupils who were asked to withdraw, together with data pertinent to their withdrawal.
7. All border-line cases given the privilege of continuing after February 14th shall be considered as probationary students subject to later enforced withdrawal if there is a falling off of effort.

Educational administrators in Calgary emphasize that the policy is concerned, not with the students who try hard and fail, but with those who have ability but fail to put forth an effort. When a student is reported to the School Board, it must be shown clearly that, in the considered opinion of the staff, he has failed to put forth the required effort. In doubtful cases, the verdict will favor the student.

There is no defensible basis for the exclusion of students who are passing their subjects. The only basis for exclusion, then, is failure by a student capable of passing grades. Exclusion is not based on one reporting period only but follows from persistent laggardness through successive reporting periods after all possible measures have been taken to rehabilitate the student.

Although the policy has been established by the board and exclusion is based on action by the superintendent, the actual techniques used in implementing the policy are within the province of the individual principal. Most schools use a capacity-achievement expectancy chart, a device developed by Dr. Safran, Director of Guidance of Calgary Schools, to initially screen the students and determine the degree of laggardness. This chart shows, for any intelligence quotient, the expected achievement for a student. It is suggested that any student whose achievement T-score is one and one-half standard deviations below his intelligence T-score, or whose achievement is less than .25, is considered a laggard. Thus a student whose expected average is 60 per cent and whose actual average is 35 per cent would be considered a laggard. This chart is used only as an initial screening device. Usually, three D's on a report card is considered cause for classification.

The guidance personnel are entrusted with preparation of laggard lists for the various schools. They attempt to discover the problems of the student and to help the student resolve these problems. The list which the counsellor prepares is submitted to the principal. Following conferences between principal and counsellor, a letter is sent to the parents informing them of their child's academic probation, and encouraging parents to cooperate with the school. In January, the principal, in conference with the staff, decides on students to be excluded.

The number of students asked to withdraw by application of the policy is indicated in Table I. The number of students excluded in each year has always been less than 1 per cent of the total school population.



TABLE I  
INCIDENCE OF EXCLUSIONS UNDER PROVISIONS OF  
THE CALGARY LAGGARD POLICY 1955-1959 INCLUSIVE

Year	Exclusions	Enrolment	% Excluded
1955 .....	11	3,271	.34
1956 .....	22	3,400	.65
1957 .....	30	3,777	.80
1958 .....	36	4,259	.85
1959 .....	35	4,696	.75

Selection of the Students for Study

*Institutions*

Western Canada and Crescent Heights, large composite high schools servicing more than half of Calgary's population, were selected for this study. The other high schools possess certain disadvantages: Central is a small, academic school; Viscount Bennett, Queen Elizabeth, and William Aberhart are new to the system.

*The Laggard Student Sample*

Administrators classify as laggards, students who are having academic difficulty. Any student showing an underachievement of over fifteen points on the T-score, or an achievement less than .25, may be considered a laggard. In 1958-59, the two schools under study classified approximately seventy per cent of the city's total laggard population. Only those in Grades X and XI during 1957-58 and 1958-59 were selected.

*The Control Sample*

The control sample varies somewhat in certain parts of the study. Some pertinent data are available for the population of all Calgary high school students, but in some instances representative control samples were selected from this population.

Achievement scores were used to test more than one hypothesis. For each credit hour of H, the student received five points; of A, four points; of B, three points; of C, two points; of D, one point. The linear honor point system is meaningful and easy to calculate.

Improvement of Laggards

The achievement scores of students classified as laggards were compared to the achievement scores of the non-laggard student population to determine the effect of warning letters on the improvement of laggards. A sample of the laggard population classified in November of 1957 and 1958, and restricted to Grades X and XI, was selected. Laggards who dropped out of school before the final report were not included. Using the above restrictions, a sample



of the non-laggard population was also selected. No effort was made to match the two samples according to age, sex, intelligence, or socio-economic status, but the groups were matched according to numbers, grades, schools, and years.

TABLE II  
SAMPLE SIZES OF LAGGARDS AND NON-LAGGARDS

Sample	School A	School B	Totals
Laggards .....	198	172	370
Non-laggards .....	198	172	370

Laggard students were identified by low marks. Thus it was impossible to equate the laggard group and the control group on the November report. Through the statistical technique of analysis of covariance, it is possible to allow for these differences in the initial report by making adjustments to the subsequent report, and so compare the regression of final scores on initial scores for both samples.

Mean achievement scores for the laggard and non-laggard groups on initial and subsequent reports are shown in Table III.

TABLE III  
MEAN ACHIEVEMENT SCORES FOR LAGGARDS AND  
NON-LAGGARDS ON THE INITIAL AND  
SUBSEQUENT REPORTS

Group	N	Initial	January	Final
		M	M	M
Laggard .....	370	17.99	18.99	18.08
Non-laggard .....	370	26.49	25.65	25.50
Lag .....		8.50	6.66	7.42

Laggards close the gap only slightly and never do become equal to non-laggards, but these calculations do show that laggards improve.

From Table IV it appears that laggards improve significantly in comparison to non-laggards from the initial to January report, and also from the initial to final report.

The January means differed significantly after they were adjusted for initial differences. Classification as a laggard stimulated significant improvement in the January score.

The laggard and non-laggard final scores differ significantly after they have been adjusted for initial differences. Classification as a laggard produced improvement in achievement but laggards never do equal non-laggards.

TABLE IV  
SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN  
IMPROVEMENT SCORES FOR LAGGARDS AND  
NON LAGGARDS

INITIAL TO JANUARY					
	Mean Improvement	S.D.	S.E.	C.R.	t. 0.1
Laggard .....	1.00	2.98	.23	8	2.58
Non-laggard .....	-.84	3.22	.....	.....	.....
INITIAL TO FINAL					
	Mean Improvement	S.D.	S.E.	C.R.	t. 0.1
Laggard .....	.09	3.09	.23	4.7	2.58
Non-laggard .....	-.99	3.23	.....	.....	.....

TABLE V  
ANALYSIS OF COVARIANCE OF JANUARY AND INITIAL  
ACHIEVEMENT SCORES FOR LAGGARDS AND  
NON-LAGGARDS

Source	df	SS y.x	Vest	Fy.x	F .01
Between means .....	1	234	234	19.8	6.66
Within groups .....	737	8,686	11.8	.....	.....
Total .....	738	8,920	.....	.....	.....

SIGNIFICANCE OF DIFFERENCE AMONG ADJUSTED JANUARY MEANS

Source	Adjusted Means	SE D y.x	t. 01	D. 01	D X.M
Langards .....	22.90	.....	.....	.....	.....
Non-laggards .....	21.74	.25	2.59	.65	1.16
General .....	22.24	.....	.....	.....	.....

ANALYSIS OF COVARIANCE OF FINAL AND INITIAL ACHIEVEMENT  
SCORES FOR LAGGARDS AND NON-LAGGARDS

Source	df	SS y.x	Vest	Fy.x	F .05
Between means .....	1	48	48	4.10	3.85
Within groups .....	737	8,607	11.7	.....	.....
Total .....	738	8,655	.....	.....	.....

SIGNIFICANCE OF DIFFERENCE AMONG ADJUSTED FINAL MEANS

Source	Adjusted Means	SE D y.x	t .05	D. 05	D YM
Laggards .....	21.97	.23	1.96	.45	.46
Non-laggards .....	21.51	.....	.....	.....	.....

Improvement of Laggards by Sex and by Grade

The 2 × 2 factorial design enables a quick determination of each of the factors, sex and grade, as well as an investigation of any interaction of sex and grade. Calculations are illustrated by Walker and Lev.

The numbers in each subgroup have been equalized by random selection from the total laggard sample.

Table VI compares the improvements of each group from initial to January report and presents an analysis of variance of these improvement scores.

TABLE VI  
A COMPARISON OF IMPROVEMENT SCORES FOR  
FEMALE, MALE, GRADE X AND GRADE XI LAGGARD  
STUDENTS (INITIAL TO JANUARY REPORT)

Source		Grade X		Grade XI		Total
		N	Mark	N	Mark	
Male	Total Improvement }	50	32	50	12	44
	Mean Improvement }		.64		.24	.44
Female	Total Improvement }	50	-29	50	16	-13
	Mean Improvement }		-.58		.32	-.13
Total	Total Improvement }	100	3	100	28	31
	Mean Improvement }		.03		.28	.15

ANALYSIS OF VARIANCE OF IMPROVEMENT SCORES (INITIAL TO  
JANUARY) OF FEMALE AND MALE LAGGARDS, AND GRADE X AND  
XI LAGGARDS

Source	df	SS	MS	F	F .05	F .01
Sex .....	1	16.19	16.19	1.35	3.89	6.76
Grade .....	1	3.07	3.07	.25	3.89	6.76
Interaction .....	1	24.10	24.10	2.00	3.89	6.76
Individuals						
within Subclasses .....	196	2,341	12	.....	.....	.....

There is no sex difference; female laggards do not improve more than male laggards. There is no grade difference; Grade XI laggards do not improve more than Grade X laggards. There is no interaction between sex and grade.

Description of Laggards

Sex

Male students are classified as laggards more often than female students.

Age

Grade X laggards are older than other Grade X students; the mode in this grade is 16 for laggards and 15 for all students; and



while the difference in Grade XI is not as pronounced, laggards are older than all students.

### *Intellectual Ability*

The difference in intellectual ability between laggards and all students is clearly insignificant; the mean for laggards is 107.1 and for all students 108. (The intelligence quotient used was determined by the Otis intelligence test.)

### *Program of Studies*

In analysis, difficulty was encountered in segregating Grade X general and academic students. In Grade X no significant difference appears in the classification of laggards. A significant difference is present in Grade XI; fewer academic students and a larger number of general and technical students are classified as laggards.

### *Grade*

The number of Grade XI laggards is significantly greater than the number of Grade X laggards. It is possible that the Grade X's may be treated deferentially on their first high school report.

### *Drop-out Rate*

Laggards drop out of school in significantly larger numbers than the general student. Since they do not adapt well they are potential drop-outs.

## **Summary of Findings**

Administrators of Calgary high schools are well satisfied that the laggard policy does rehabilitate many laggard students. Public response has been favorable, and the policy has become accepted as normal procedure. The policy also seems to be fulfilling its intended purposes. It has increased school morale, increased job satisfaction of teachers, and decreased distraction by resistant students.

In comparison with non-laggards, the achievement of laggards improved significantly from the initial to the January report. While there was improvement from the initial to the final report, it was not as significant as that from the initial to the January report.

The achievement of laggards did not improve to the point of equalling that of non-laggards in the period under study.

This analysis showed many interesting features not directly concerned with the main problem:

1. Grade XI laggards did not improve their achievement more than did Grade X laggards.
2. Female laggards did not improve their achievement more than did male laggards.

3. Male students were classified as laggards more frequently than were female students.

4. Laggard students were older than the Calgary high school population, especially in Grade X.

5. Laggard students did not differ from the Calgary high school population in intelligence.

6. A smaller proportion of academic students and a larger proportion of general and technical students were classified as laggards.

7. A smaller proportion of Grade X than Grade XI students were classified as laggards.

8. The ratio of laggards to non-laggards varied from school to school.

9. The drop-out rate of laggards was greater than the drop-out rate for the Calgary high school population.

### Implications for Research

While this study is limited in scope, the implications of the findings merit consideration. There is strong evidence that laggards do improve their achievement but rehabilitation is only partial.

Related literature suggests that lack of study habits characterizes the laggard student. Planned systematic teaching of study skills in the lower grades followed by a remedial study program in high school appear to be indicated.

The use of the "3 D" system does not reach all laggards, and many true laggards receive no help. Research into methods of classification and rehabilitation is required.

What is the post-school history of excluded students?

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## BOOK REVIEWS

*Pupil Personnel in Alberta Secondary Schools. Monographs in Education, No. 6.* By D. B. Black, R. S. MacArthur and J. G. Patterson. Edmonton, Faculty of Education, 1961. 44 pp. \$2.00.

This monograph includes two studies condensed from reports prepared for the Royal Commission on Education in Alberta in 1958-59. The first, by MacArthur and Patterson, is a review of studies of pupil retention and drop-out in Alberta secondary schools to 1958 and studies relating to the prediction of success in school examinations. The second, by Black, is a new study of drop-outs, using a method more refined than those used in earlier Alberta studies.

In their report MacArthur and Patterson offer this note on methodology:

"One method of determining the number and percentage of drop-outs is to compare the total enrolment in selected higher grades in appropriate later years, with the total enrolment in Grade I for any selected base-year. Thus, the total Grade IX enrolment for June, 1954, may be compared with the total Grade I enrolment for June, 1946. This method does not allow for the effects of immigration, emigration, or death. If it is assumed that the effects of immigration are approximately counterbalanced by the combined effects of emigration and deaths, and that the rates of retardation and acceleration for a particular grade are constant over a period of years, this method can give a reasonably accurate picture of the retention and drop-out rate of pupils.

This is careful and honest reporting, but what assumptions! At least some of them need to be tested, and fact substituted for supposition. Black accepted this challenge and, by conducting a longitudinal study following the Grade IX class of 1955 through the next three years, obtained different and obviously more accurate results.

But he too stopped short. He treated as drop-outs all pupils who withdrew from Alberta public secondary schools during the three years covered by his study. In his words:

"It may well be that some of those reported as dropping out did continue with their schooling outside the province, or chose to enter trades with specialized training programs, for example, apprenticeship training."

Had he had the time, I think he might have discovered from the other nine provinces how many pupils transferred to their schools from Alberta at the grade levels in which he was interested. He might then have made the lesser assumption that their subsequent careers were similar to the careers of those who remained in Alberta.

All studies reported, including Black's, share the fault that no account is taken of the admission of Alberta high school graduates to university institutions other than the University of Alberta.



In spite of methodological limitations, these reports show forcefully that a disturbingly high proportion of able youngsters drop out of high school before reaching the levels of which they are capable.

The evidence is "that overageness, male sex, low achievement, low mental ability, and low socio-economic level are the major factors positively associated with drop-out from Alberta schools".

This kind of review of research is a valuable service and I like Black's concluding summary and plea:

"A characteristic of most dropout studies is that they are descriptive. Data relating to the number of dropouts have been reported on a wide variety of levels ranging from the national scene to the local school. Invariably, the magnitude of the number of students leaving school is startling. It would seem that the greatest need is not for continued descriptive studies but rather the establishment of experimental programs aimed at reducing student dropouts."

Edward F. Sheffield,  
Research Officer,  
Canadian University Foundation

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*Rural Alberta: Patterns of Change.* Monographs in Education, No. 5. By Harold J. Uhlman. Edmonton, Faculty of Education, 1961. \$2.00.

In this monograph the author has taken a close look at the hazards facing rural education by studying basic changes taking place in the population and economy of the Province. The presentation is straightforward and readable; the charts and graphs summarize the facts skilfully. The main conclusion is clear—rural education faces plenty of problems.

People in Alberta are on the move, from the north to the south, and from the rural areas to the big cities. At the same time the kinds of jobs, including those on the farms, are changing too. Farms are becoming larger and fewer in number, and proportionately fewer of them are farmed by owners. More farmers are living away from their farms in nearby larger communities. Each of these changes poses problems for the rural school.

Education is becoming more expensive. The cost of new buildings and of replacements has soared. Salaries and other operating costs have risen. New kinds of courses require new kinds of specialists. The numbers of children are increasing more rapidly than the population in general. More and more of them are conveyed to school and back. Even with added help from the provincial treasury the financing of education becomes more difficult.

Although their salaries have risen there is a shortage of well-trained teachers. The need for new kinds of specialists outpaces the supply of such. And like professionals in other fields, teachers are fleeing the rural areas for the attractions of the big cities.

The author provides a detailed account of these changes in rural Alberta, and offers no easy solutions to the problems raised. However, the problems are not unique. All across this country populations are moving. The changes in the job world are raising desperate challenges for educational institutions at all levels. Because Canada has depended on migrants to do many of the skilled and professional tasks we find ourselves with a meagre system for educating and training our young people. Thus in this decade we face an avalanche of new students with inadequate school plants and insufficient trained teachers.

This report adds some new fuel to the growing sense of urgency about education in Canada. At almost all levels of education, both inside and outside our educational institutions, there is dissatisfaction with the results of our present efforts. This volume leaves one with the feeling that education is not merely in need of improvement—it needs to be lifted to totally new levels.

*Oswald Hall  
University of Toronto*









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THE COMMITTEE ON EDUCATIONAL RESEARCH

*Faculty of Education*

*University of Alberta*





# THE CARNEGIE-UNIVERSITY OF ALBERTA JOINT PROJECT ON EDUCATIONAL RESEARCH: A REPORT AFTER FIVE YEARS

H. T. COUTTS, *Chairman*  
and

DONALD B. BLACK, *Director*

*Alberta Advisory Committee on Educational Research*

In 1956, the Carnegie Corporation of New York announced the award of \$50,000 to the University of Alberta as a stimulus to its research program. This award to further the work of the Alberta Advisory Committee on Educational Research (AACER) was to extend over a five-year period. It is now time to ask what has been accomplished and what lies ahead for educational research in this Province.

In 1953, three years prior to the award of the Carnegie grant, a meeting of representatives of the University of Alberta, the Department of Education, the Alberta Teachers' Association, the Alberta School Trustees' Association, and the Alberta Federation of Home and School Associations met to form the AACER. It was agreed that the Committee would restrict itself to encouragement, advice and securing financial support for educational research, leaving to the Faculty Committee on Educational Research (FCER) the conduct of research projects. In its submission to the Carnegie Corporation in 1956, the University of Alberta was able to cite the following accomplishments of the AACER in the first three years of its existence:

1. Development of a widely based joint sponsorship of educational research by the five major organizations with province-wide interest and responsibility in education: the University of Alberta, the Department of Education, the Alberta School Trustees' Association, the Alberta Teachers' Association, and the Alberta Federation of Home and School Associations.
2. Provision of an assured income to maintain a limited research program, and to publish a quarterly research journal.
3. Organization of cooperating research ventures involving university staff members, Department of Education officials, superintendents of schools, principals and teachers.
4. Encouragement of leadership in research by staff of the Faculty of Education, Department of Education officials, superintendents and teachers.
5. Editing and publishing of *The Alberta Journal of Educational Research*.

Notwithstanding these modest achievements, it was evident from the beginning that the extent of financial support was not proportional to the increasing need for research, the training of research work-

ers, and an expanded program for the dissemination of research findings. While conceding that the University had staff, library facilities, and a graduate school to draw upon, the creation of the AACER as a coordinating body would, by its very existence, serve to increase the quantity and quality of research under the guidance of the FCER. It was also thought that this increase in research activity would stimulate such local support of the AACER program as ultimately would make the organization self-sustaining. Something was needed however to stimulate this initial acceleration of research activity. To this end the assistance asked from the Carnegie Corporation was directed towards facilitating the research efforts of the AACER/FCER by three major means: increased research grants-in-aid, the provision of research fellowships, and an expanded program to make the public aware of research findings. The requested assistance was arranged to provide financial aid on a sliding scale in accordance with a planned program of increasing support for research from AACER/FCER, to the extent that, at the end of the five year period, marking the end of the Project, the program would be completely self-sustaining.

The effect of the Carnegie grant was immediately apparent. At the end of the first year of the Project, the expenditures of the AACER were \$17,510 as against \$2,724 spent the previous year. During the last year of the Project, expenditures were \$22,117. The growth of the Capital Account was equally encouraging. Through the planned assignment of small amounts from the Current Account plus designated donations of contributors, the Capital Account was increased from \$1,925 in September, 1956, to \$16,335 by September, 1961. During the five years of the project, the sum of \$31,463 was provided for research grants-in-aid. This figure attains special significance when it is compared with the \$1,009 awarded as research grants-in-aid during the three years prior to the initiation of the Project.

The publication program of the AACER has been expanded. *The Alberta Journal of Educational Research* has maintained the high standard set for it and has become internationally known. Honoring its commitment to the Project, the Committee has published the *Alberta Research Newsletter*. The acceptance of this publication, carrying as it does the news of research to a public heretofore not reached, has exceeded expectations. In 1959, the Committee published its first Monograph in Education: *Composite High Schools in Canada* (edited by Andrews, J. H. M., and A. F. Brown). This publication was followed in late 1960 and early 1961 by five additional monographs: *School Examination Practices and Standards in Alberta* (MacArthur, R. S. and S. Hunka); *The Al-*



*berta Teacher Force in 1957-58* (MacArthur, R. S. and S. A. Lindstedt); *Theory and Practice Governing the Time of School Entrance* (Dey, Jean D.); *Rural Alberta: Patterns of Change* (Uhlman, Harold J.); *Pupil Personnel in Alberta Secondary Schools* (Black, D. B., R. S. MacArthur, and J. G. Paterson).

Aided in part by the Project, gains have been made in the graduate studies programs of the Faculty of Education. During the five years of the Project eleven research fellowships have been awarded; eight to doctoral and three to master's candidates. Under the terms of the Project agreement, the University was to assume full financial responsibility for two fellowships while the Committee was to contribute towards a third. By the end of the fourth year of the Project, the University had assumed full responsibility for all non-designated fellowships. From two research fellows in the Faculty during the first year of the project the number of fellows will increase to thirty-eight in the 1962-63 University winter session. No small credit is due to the Project for this gain. Moreover, the ready placement of graduate students in senior positions both inside and outside the Province provides a source of encouragement to the Faculty and the University.

These, then, are the concrete outcomes of the Project, but the most far-reaching effect may lie in areas in which the Project has played an indirect part. Several examples of this indirect, but none-the-less real influence may be cited. For example, during the period of the Project, enrolments in the Faculty of Education have soared. At the same time admission qualifications of incoming freshmen have been progressively raised. This expansion so quickly overloaded existing facilities that the provision of new ones became imperative. In the face of documented evidence supporting the arguments for expanded facilities, a multi-storey Education Building has been authorized for the Edmonton campus. Most significant in this new building, to be completed within two years, is the assignment for educational research of one floor, 8,400 square feet, in the office tower. Other features of this building, now under construction, reflect the research orientation of the teacher education program in this Province.

There has been a marked change in approaches to teacher education. Much of this change can be directly attributed to the existence of an active research program existing in an atmosphere where such activities are openly encouraged by the administration. Credit is also due to the Alberta Royal Commission on Education headed by Senator Donald Cameron. It was the experience of the commissioners that generally factual evidence on critical educational problems while sorely needed was too often lacking. In an at-

tempt to secure needed evidence, the Cameron Commission decided to conduct an active research program. It was not surprising that the Commission should draw upon local research workers who had gained experience afforded by Project research grants-in-aid. It was the interest of this Commission in research as a basis for making recommendations that distinguished its final report. The fact that this Commission was able to draw heavily upon pertinent research data already completed and, what is more important, could carry forward a highly successful research program of its own within the short period of its existence attests in no small way to the success of the Project. Further, the Commission was so convinced of the need for factual data as the basis for making sound educational decisions that it devoted special attention through its recommendations to the provision of a greatly expanded program of educational research for this Province. Further mention will be made below concerning this challenging blueprint for the expansion of educational research.

Another indirect influence of the Project on Provincial and National education has become apparent in recent educational conferences. The number of research-orientated papers presented at these conferences by Albertans or by Alberta-trained educators has been impressive. A case in point is Conference Study Guide No. 7, *Research in Education*, published by the Canadian Conference on Education. Four of the six articles were by Albertans. The dominance thus indicated is likely to increase rather than to diminish. The attitudes which are responsible for this result have not been achieved through mere verbalization of philosophical points of view. Rather, this research orientation demands for its care and nurture, involvement in the conduct and application of research. On the one hand, the conduct of research develops an increased sophistication in research design; on the other, it develops an appreciation of research done by others and an understanding of the significance of subsequent problems which arise through the conduct of original research. Most of all, the conduct of research develops an attitude towards research on the part of the investigator that permeates the professional life of the individual. Without the facilitating structure of a supporting grant-in-aid program, these desirable goals would be difficult to achieve. In perspective, the Alberta program for the encouragement of educational research has moved far in the direction of a scientific approach to education and its problems. In this accomplishment much of the impetus was given by the Project.

Viewed in the above terms, the Project has been successful. Its short term goals in all but one instance have been achieved or surpassed. But has this progress been enough?



One expectation of the originators of the Project has not been fully realized. It had been expected that, under the stimulus of a greatly expanded research program, increased contributions from local sources would make the AACER program self-sustaining. It cannot be denied that local contributions have increased markedly during the past five years; so have the costs of research.

The committee has made every effort to secure contributions from local sources; however, it also is sympathetic to the problems of potential contributors who must operate within fixed budgets. The increase in the contributions of the Alberta Teachers' Association and its locals has been a constant source of encouragement. The increase of the contribution of the University of Alberta from \$2,000 to \$5,000 per year by way of grants, supplemented as it is by way of staff, scholarships and fellowships, is substantial. The support of the Department of Education, while increasing from \$500 to \$750 per year over the course of the Project, has been disappointingly low, particularly in view of an active public relations program to bring the work of the Committee to the attention of the Government and in view of the strong recommendations of the Alberta Royal Commission on Education. During the last two years of the Project, the Government has changed its system of awarding grants to school authorities. This Foundation Plan has resulted in a sharp curtailment of contributions from local school boards from whom increasing support has been expected.

Another problem that appears to herald further problems relates to the spectacular growth in university enrolments, and particularly in the Faculty of Education at the University of Alberta. By way of illustration, during the first year of the Project (1956-57) 1,098 full-time students were enrolled in the Faculty of Education. In the last year of the Project (1961-62), 2,804 students were enrolled as full-time students exclusive of those in the Evening Credit and Summer Session programs. Because of rising enrolments and the inability to provide sufficient staff of the required calibre in accordance with these enrolments, the time normally available to research has to a large measure been absorbed by the necessity of maintaining the teaching program. By way of illustrating the impact of these trends on educational research, during the last year of the Project only 37% of the sums authorized as research grants-in-aid were in actual fact spent.

Another serious impediment to the Project and perhaps the one most frequently cited by the contributors, has been its failure to apply research findings in the field. There seem to be two aspects to this criticism. The first lies in the area of public relations. Repeatedly when appealing for funds, from the Provincial Government



in particular, the question has been asked, "Can you show me one instance where research has influenced educational practice in this Province?" This is an extremely difficult question to answer for the gains of educational research like those of any other science are often small and imperceptible, accumulating so quietly that, after a period of time, a change in educational practice has taken place unnoticed. This change in position is diametrically opposed to the single spectacular experiment which in the past has caused educational change, but often with detrimental effects. Moreover, it has been the policy in the past of the Committee to encourage as many individuals as possible to participate in research. This position is based on the belief that a research orientation of staff can only be truly engendered by the conduct of research in the particular field of interest of the individual. Yet it cannot be denied that the Committee, apart from its two periodical publications noted earlier, has not made any planned dramatization of the application of research findings in every instance. Perhaps the ways of the professional advertiser while alien to the practicing research worker are essential to a financially sound self-supporting research program.

The second area of complaint has been the failure of the Committee to provide for field consultant services. It cannot be denied that an active field service program identified with the Committee would constitute the best single way of making it apparent to the supporting agencies that the local contributions are of local value. However, as the Faculty of Education is presently constituted, the request for field services is not directed to the Committee, but rather to individual specialists on staff. Consequently, the relationship between the Committee and the specialist is a remote one, existing only in the facilitation of the individual's furtherance of his own competencies through research grants-in-aid.

What then for the future? There can be little doubt of the need now, more than ever before, for more educational research at all levels of education. This will necessitate much more encouragement and support for research. The Alberta Royal Commission on Education, basing its recommendations on what already has existed and what already has been accomplished in this Province, has provided a challenging blueprint for the future development of research. It is not the intention of the writers of this Report to elaborate upon the outline provided by the Commissioners other than to note that the plan calls for the provision of space, equipment, and a guaranteed yearly financial income to ensure stabilization of the research program. The first part, the provision of adequate quarters for research, has already been planned and will be a reality in 1963 upon the completion of the new Education Building on the Edmon-

ton campus. It is estimated that capital costs for the equipment of the new research facilities will range between \$175,000 and \$200,000 while the annual operating costs will be in the neighborhood of \$150,000 with the Provincial Government supplying two-thirds of this amount. The remainder will come from the usual sources as at present. Apart from these direct recommendations for greatly increased support in aid of research, the major problem will be the provision of staff to man such an establishment. While there is adequate staff within the Faculty already to staff an expanded research program, the replacement of staff so seconded would constitute a greater problem in the last analysis than the employment of adequately trained staff.

In summary, the progress in educational research supported under the terms of the Project has been most encouraging. The goals of the Project have been for the most part attained. The goal of complete financial support at the local level has fallen short of original expectations due partly to trends toward the effecting of economies in educational spending. It has been evident that the University of Alberta, the AACER and the Carnegie Corporation of New York have more than lived up to their part of the agreement. The efforts of the AACER and the University have already been noted. The Carnegie Corporation, on its part, has provided beyond the terms of the Project travel grants to permit three Faculty members to visit American institutions and organizations engaged in educational research. There can be no denying that without the existence of Project, many of the salient features of our program would have been long in coming. Only time will tell how sound the foundations of educational research established under the Project really are. Only time will tell the extent to which the challenge for a greatly expanded research program as recommended by the Alberta Royal Commission has been accepted. The past five years have been important ones for research in this Province. That the Carnegie Corporation has shown confidence in us during these five year, gives us confidence to approach the challenge of the future.

## APPENDIX A: Distribution of Carnegie Funds during Joint Project

## Year of Project

	1956-57	1957-58	1958-59	1959-60	1960-61
Carnegie Grant					
(U.S. dollars) ...	13,500	11,500	10,650	8,300	6,000
(Cdn. dollars) ...	13,275	10,987	10,240	7,963	5,884
Fellowships .....	5,000(5,000)*	4,500(4,500)	4,000(4,000)	3,000(3,000)	‡(2,000)
Staff:					
Sec.-Librarian..	1,873(2,000)	‡(1,800)	(1,500)	(1,200)	( 900)
Director .....			‡(1,000)	( 750)	( 500)
Editor .....		500	500	1,000	1,000
Library .....	1,000(1,000)	750( 750)	‡( 250)		
Publications:					
Journal					
Newsletter .....	500( 500)	250( 250)	500‡( 150)	400( 100)	2,000§
Monographs					
Research					
Equipment .....	500( 500)	0( 250)	250†	250	250
Research					
Project .....	4,402(4,500)	4,987(4,000)	4,990	3,313(3,000)	2,634(2,500)
TOTAL .....	13,275	10,987	10,240	7,963	5,884

\*Amount Proposed in Project proposal in parentheses.

## Notes:

‡University assumed full responsibility for this item at this point.

†Heavy equipment rental charges seemed eligible for Project support although not originally budgeted.

§Increased tempo of the publications program needed further support beyond that originally budgeted particularly in 1960 when because of Monograph program the total year's publications costs were \$9,419.

APPENDIX B: List of Research Projects Supported *en toto* or In Part by Joint Project Grants-in-Aid.\*

1. Survey of Arithmetic Achievement in Alberta.
2. Calgary Bussing Project.
3. Adult Attitudes Toward Education in Alberta.
4. Survey of Financial Assistance for Graduate Study in Education.
5. Edmonton Grade III Achievement Study.
6. Improvement of Freshman English.
7. Five School Study.
8. School and Religion Study.
9. Special Project file (5 Minor Projects in Testing).
10. Canadian Language Usage Study.
11. Matriculation Articulation Study.
12. Clover Bar Survey.
13. Spelling Study.

\*This list is given in terms of the *Short Title* used to identify Project for AACER Accounting. Many of these projects have been already reported in detail in *The Alberta Journal of Educational Research*. The list does not include research theses conducted by Project Research Fellows nor other graduate theses emerging directly from the projects noted above.



14. Adolescent Attitudes Study.
15. Edmonton Grade VI Study.
16. Freshman Leisure-Work-Study Time Survey.
17. Leisure Time Reading of the Jr. and Sr. High School Students.
18. Leader Behavior in Educational Personnel.
19. Follow-up Study of Certificated Teachers After Five Years.
20. Group Structure Influence on Student Honesty.
21. Relationship of Speed and Fluctuation on Test Scores.
22. Relation of Speed and Fluctuation on Creativity.
23. Cuisenaire Rod Mathematics Study.
24. Study of Design and Texture Preferences.
25. Study of Mathematical Competencies of Elementary Teachers.
26. Social Stratification of Alberta Freshmen.
27. Childrens' Concepts.
28. Development of a Canadian Reading Readiness Test.
29. Intellectual Ability and Sociometric Status.
30. Non-Academic Differences between Degree and One Year Program Education Freshmen.
31. Study of Errors.
32. Analysis of Alberta W.I.S.C. Scores.
33. Follow-up Study of Non-Academic Differences between Alberta Freshmen.
34. Calgary Streaming Study.
35. Academic Gains among Failing Students.
36. Teacher Judgments about Teacher Education.
37. Studies of Motor-Cognitive Functions.
38. Adolescent Inventory Analysis.
39. Comparison of the Achievement of Alberta and New Zealand Grade VI Students.
40. A Study of Stereotypes in Grade IX.
41. Edmonton Streaming Study.
42. Cognitive Aspects of Teacher Selection.

Appendix C: Recommendations and Comments of the *Alberta Royal Commission on Education* with regard to Research in Education (pp. 418-425).

## Chapter 32

### RESEARCH IN EDUCATION

It is an accepted fact of present day society that much of the credit for the rapid improvement in our standards of living, our technological development and the utilization of our resources is directly attributable to the fact that large sums of money and the country's best brain-power have been combined to conduct basic and applied research in industry and business. It is therefore not surprising that a substantial number of briefs submitted to the Commission by responsible groups strongly urged the importance of providing adequate resources for educational research. Indeed, the Commission was not long in discovering that time and again its own work was hampered by lack of information. In most instances the basic research on which to arrive at conclusions and formulate policy was lacking. In other instances the limited investigation that had been carried out was either too local or too old to be of much

value. Again, there were numerous instances where the raw data were available but had never been assembled and analysed so as to permit inferences and conclusions.

This lack of adequate research in the field of education is looked upon by the Commission as extremely serious. It is simply impossible to provide reasonably accurate hypotheses and conclusions on the myriad problems of education unless the necessary time, money and trained staff are made available. One of the Commission's first official acts was to set aside a sum of money for the purpose of carrying out a limited number of research projects without which no secure conclusions could be drawn, or recommendations made. Ten such projects, costing \$18,660.59 were initiated and carried out. The amount of information gained from the small investment has been of very great assistance to the Commission: its value serves to underline the importance of continuing provision for educational research as a necessary element in any effective program of education.

Business and industry spend hundreds of millions of dollars annually on research, and find it good business to do so. Government, and more particularly the public whose support is so vital, have been extremely slow to realize that an investment in educational research might pay returns far greater than a comparable amount spent in industry.

### Developments

Educational research in Alberta has until very recently been almost entirely confined to post-graduate work at the University. Candidates produced theses to satisfy the requirements, first of the M.A. degree, and then of the present M.Ed. and Ph.D. degrees. Previous to the establishment of the Faculty of Education in 1945 and the formation of the Alberta Advisory Committee on Educational Research in 1953, research was limited by lack of funds, lack of facilities and lack of an adequate medium for the dissemination of research information. It is still woefully restricted, although some encouragement has been given since 1953.

The purpose of the Alberta Committee on Educational Research—representing the University, the Department of Education, the Alberta School Trustees' Association, the Alberta Teachers' Association, and the Alberta Federation of Home and School Associations—was to initiate, promote, finance and publish educational research in Alberta. As a means of disseminating research information it established the *Alberta Journal of Educational Research* in 1955, which until 1958 was the only educational research journal published in Canada.

## RECOMMENDATIONS:

275. That immediate plans be made by the provincial government and the University to provide the space and equipment for the educational research organization described above at an initial cost of \$200,000.
276. That provision be made in the annual university budget for the staff establishment prescribed, at an annual initial net cost of \$100,000.
277. That the provincial government make provisions for the necessary capital and operating grants on a basis similar to that now used for the Alberta Research Council, at the earliest possible date.
278. That the University prepare a program of research projects to be completed in the next five years, and conduct a campaign to secure finances in whole or in part from outside sources—individuals, business, industry and foundations.
279. That the Province provide the legislative authority to constitute on a formal basis a revised and re-constituted Alberta Committee on Educational Research.

Since its establishment in 1954, the Alberta Committee on Educational Research has been able to secure limited funds from its member associations, from business and industry, and from some of the large foundations. Already it has made a small but significant contribution to knowledge on Canadian education. In 1959 the first of a series of Alberta monographs, scholarly studies on educational problems of major importance, has been published. To supplement this work at the layman's level the Alberta Newsletter on Educational Research has been established.

During the past four years a number of other significant moves in the direction of more educational research have been taken. The Department of Education has established the position of Coordinator of Tests and Measurements, the Edmonton Public School Board has created a position of Director of Research and Personnel, a group of principals and superintendents in the Red Deer zone have established the research-oriented Five Schools Project, and a joint committee of the University and the Department of Education have established the Matriculation Study Subcommittee. The contributions of the Carnegie Corporation of New York, the W. K. Kellogg Foundation of Battle Creek, Michigan, and the support of local individuals and agencies has enabled the establishment in the University of an initial plan of organization and the carrying out of further valuable projects. These developments represent a sound



beginning in the systematic and scholarly attack on fundamental problems of education.

### Needs

In a special memorandum prepared at the request of the Commission, the Faculty of Education at the University of Alberta has stated the specific needs for educational research as follows:

1. Research designed to study the general problems of society, of which education is one. Such research, because of its sociological and economic aspects, should be planned and executed by trained research workers in sociology, economics, or education, or by teams of workers from these fields.
2. Research designed to study educational problems of particular interest to responsible groups of citizens or responsible institutions. Such research studies might be undertaken (for the Canadian Education Association, Canadian Teachers' Federation, Canadian School Trustees' Association, and others) on an *ad hoc* basis, and would be under the direction of well-trained research staff. Alternatively, studies might be conducted by a permanent educational research organization developed along the lines of the Alberta Research Council, or as special projects with special staff working with a Director of Educational Research and the Faculty of Educational Research Committee, using the appropriate facilities of the University.
3. Research designed to study problems in education at both the theoretical and practical level. Such research should be centred in the Faculty of Education where it can be sponsored, planned, and conducted by trained staff, either as part of their own studies or those of graduate students. Facilities for such research should be an integral part of the resources of the Faculty of Education. The Director of Educational Research and the Faculty of Education Research Committee should provide stimulus, guidance, liaison and assistance to carry through research projects.
4. Research designed to accumulate facts about schools, pupils, teachers, examination results and related problems, or to answer specific questions of direct interest to the Department of Education. This type of research should be done by the Department of Education, and the department should make available the necessary staff and facilities.

### Organization

In the carrying out of the four types of research outlined above, two main existing agencies are involved: the Department of Education and the Faculty of Education. Other faculties will or should be involved, and in this sense the second major agency should be the University inclusive of all faculties rather than just the Faculty of Education. As part of its overall plan the Commission has proposed the establishment of a third agency, the Alberta Educational Planning Commission, which will have an important and direct relationship to the original agencies in determining, initiating and making provision for educational research.

#### *The Department of Education*

In its normal administrative routine the Department receives a continuous flow of reports and statistical data which should be

analysed and consolidated in such a manner as to show significant interpretations and relationships, while at the same time organizing the original data as a basis for further study as required.

#### RECOMMENDATIONS:

274. That the Department of Education establish as soon as possible an office of standards, statistics and information.

#### *The University*

At the University, while it is recognized that the Faculty of Education should continue to give educational leadership, other faculties such as those of Arts and Science, Agriculture, and some others, have interests which may have a direct or parallel bearing on various problems of public education and which should be represented on the University section of the A.C.E.R. Individuals, groups of individuals consisting of professors, graduate students and other qualified people should work under the direction of the appropriate faculty committee and under the overall guidance of the Director of Educational Research.

Research projects would normally come from interested individuals, divisions and departments of the University, and be approved by the appropriate faculty organization before going forward for final approval of the Alberta Committee on Educational Research. It would be expected that the University should at all times stress the value of an interdisciplinary approach where this is appropriate. Copies of all reports on research projects should be filed with the Alberta Educational Planning Commission as well as with the Committee. Research projects originating outside of the University should be submitted for approval directly to the Alberta Committee on Educational Research, which would then have the responsibility of assigning the project to the individual or group best qualified to carry it out. From this point on the project would be handled in the same way as one originating in the University.

In order to make an expanded program of educational research effective, provision should be made in both the Department of Education and in the University to provide a nucleus of staff and equipment and the necessary space in which to work. The office of standards, statistics and information and the Central Registry of Teachers should be under a director with the necessary staff and technical resources to carry out the tasks of collating, analysing and evaluating educational data, and of keeping an up-to-date registry of all teachers within the province.

Provision should be made at the University for a full-time Director of Educational Research, who will be attached to the



Faculty of Education. This officer should have with him a minimum core of highly qualified research personnel, with the additional provision that personnel for special projects could be seconded from other agencies, either public or private, for such times and such purposes as were approved by the Faculty and the Alberta Committee on Educational Research.

The minimum requirements for space, staff, equipment and money required to provide facilities for a modest program of educational research in the next ten years as envisaged by the Faculty of Education would be as follows:

1. *Space Requirements*

8,000 square feet to provide a machine room, research library, research storage room, two research workrooms and several offices.

2. *Equipment*

Minimum of 5 typewriters, 10 calculators, IBM equipment less electronic computer, office equipment, and provision for share of time on an electronic computer.

3. *Staff*

Director, research director, machine-room supervisor, 5 research assistants, 4 secretaries, plus provision for an estimated special projects staff which might average 10 persons.

4. *Estimated Capital Costs for Space and Equipment*

..... \$175,000 - \$200,000

5. *Annual Operating Costs, 1960*

a. Machine rentals:

IBM equipment and electronic computer ..... \$ 30,000

b. Regular staff—12 people ..... 60,000

c. Special project staff ..... 50,000

d. Supplies and publications ..... 10,000

e. Research library ..... 1,000

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\$151,000

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It is possible that many special projects could or would be financed from sources other than governmental or university.



# PROFILES OF SOME STEREOTYPES HELD BY NINTH-GRADE PUPILS

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Stereotyping, defined (8, p. 107) as "a tendency to attribute generalized and simplified characteristics to a group of people in the form of a verbal label," is probably one of the major correlates of tensions in intergroup relations. In recognition of this probability, the Third Session of the General Conference of UNESCO (1, p. 1) designated "the ideas which the people of one nation hold concerning their own and other nations," as one of the areas of "Tensions Affecting International Understanding." Young states (2, VII) that "the understanding of international tensions is beclouded with stereotyped thinking," and Klineberg submits (2, p. 124) that "our educational attack must be against all forms of stereotyped thinking." Granting the validity of these views, it would seem especially important for teachers, and others concerned with education, to have some knowledge of the stereotypes held by their pupils.

## **The Purpose of the Study**

The purpose of this study is to provide information about the stereotypes of Canadians, French Canadians, Englishmen, Americans, Indians, and Russians, as they are perceived by ninth-grade Alberta pupils. It is felt that such information would be helpful to teachers in general, and especially those concerned with teaching against stereotyping and toward intergroup and international understanding.

## **The Instrument Used**

As a measure of stereotyping, a test devised by Stautland (7) was used.\* Constructed after the manner of Osgood's semantics differential (4), and as revised for this study,† the test places the respondent in the situation of judging various concepts: Canadians, French Canadians, Americans, Englishmen, Indians and Russians, in regard to pairs of polar terms: practical-impractical, kind-cruel, intelligent-dumb, superior-inferior, happy-sad, clean-dirty, brave-cowardly, peaceloving-warlike, honest-dishonest, hardworking-lazy. These polar terms were chosen from terms reported by UNESCO to be most often used by the peoples of the world to describe each other (2).

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\*Permission of the author was obtained both to use and revise the test.

†The only change made was to substitute the concepts Canadians, French Canadians, and Indians for the concepts Chinese, Mexicans, and Norwegians. Stautland had included Americans, Englishmen, and Russians in the original test.

The respondent judges the concepts in relation to a seven-point scale, where the directions are that marking the middle of the scale indicates the respondent thinks the concept is neutral in relation to the ends of the scale, and marking outward from the middle indicates the respondent thinks the concept has a progressively stronger relation to either end of the scale, as follows:

Concept (Canadian, French Canadian, etc.)							Polar Term (Cruel, etc.)
Polar Term (Kind, etc.)	( 3 )	( 2 )	( 1 )	( 0 )	( 1 )	( 2 )	

For testing purposes, the polar terms were arranged by random procedures, the arrangement being different for each concept. For purposes of statistical treatment, the scale was weighted from one to seven, starting with one at the positive side each time, the polar terms being arranged with the positive terms on the left, the negative on the right. This was done to make clear the position of each group concept on each positive-negative continuum.\* Since there are 10 pairs of polar terms for each group concept, and since the smallest value possible for any pair is one, the lowest score obtainable for any group is 10, the highest 70. For the total test the range is from 60 to 420.

As evidence of the reliability of the test, Stautland presents test-retest total score reliabilities of over .90 for groups of high school pupils. As evidence of validity, Stautland obtained a validity coefficient of .39 with a test of stereotyping reported by Siegel (5). However, it is also evident that the test has a certain "face" validity, or logical validity, for with it we are able to ascertain the strength of a respondent's "tendency to attribute a verbal label to a group of people." We can also ascertain some specific characteristics of the verbal label.

### The Sample

Two considerations provide the rationale for choosing the ninth-grade level for the investigation of stereotypes: (a) pupils are old enough at this level to have developed somewhat definite intense stereotypes, and (b) pupils at this level still have some years of schooling before them, so that such implications for curriculum change as information about pupil stereotyping behavior might provide may still be implemented.

In selecting a sample of ninth-grade pupils for the study, individuals were sought of approximately similar socio-economic

\*This is equivalent to adding a constant of 4 to the original weights of 3210123. Such an addition does not change the shape of a distribution. It was made in this case simply for convenience and does not in any way alter the results of the study.



background, educational level and age. Accordingly, the stereotyping test was administered to five typical ninth-grade classes in a Calgary junior high school, comprising 70 boys and 62 girls chosen for their homogeneity in respect to the aforementioned variables.

### Results

The stereotyping test was given to the sample on April 18, and, in order to obtain test-retest reliability coefficients, again on May 9, 1961. Table I shows the test-retest coefficients for the total test and for each group by boys, girls, and total sample. It is not surprising that these coefficients are rather low, given the age range of the sample, the brevity of the subscales, and the fact that, in testing for stereotypes, we are dealing with attitudes which are often none too stable. It will be noticed that in terms of absolute differences in reliability coefficients and except for the Indian group, it seems at first glance that girls might be more reliable in their stereotyping responses than boys. However, for each subscale a *t* value was calculated for the difference in reliability coefficients of boys and girls, using Fisher's *r* to *z* transformation (3, p. 147), and no difference in test-retest reliability coefficients for boys and girls was found to be statistically significant. Apparently the boys and girls did not differ in reliability of stereotyping responses.

TABLE I  
TEST-RETEST RELIABILITY COEFFICIENTS FOR THE  
STEREOTYPING TEST BY BOYS, GIRLS, TOTAL SAMPLE\*

	Boys	Girls	Total Sample
Canadian .....	.49	.64	.56
French Canadian .....	.64	.65	.64
American .....	.47	.56	.52
English .....	.50	.58	.55
Indian .....	.53	.49	.52
Russian .....	.41	.53	.46
Total Test .....	.50	.70	.60

\*1st Administration, April 18, 1961.

2nd Administration, May 9, 1961.

Still another question may be asked: Are there significant differences in reliability of response as between the six groups? We may answer this by again applying the *r* to *z* transformation. Since



there were no statistically significant differences between boys and girls, the technique was applied only to differences for the total sample. Of the possible fifteen significant differences in reliability coefficients, just one was statistically significant, that being the difference between French Canadians and Russians, which was significant at the 5% level of confidence. This is not a very meaningful finding, however, for one significant difference in fifteen possibilities may easily occur by chance. We must conclude that the sample did not show any particular tendency to vary in its reliability of response as between groups.

The means and standard deviations for the groups, by boys, girls, and total sample, are shown in Table II. These statistics were obtained by using the system previously described: the means for each group were derived by assigning values from one to seven along the continuums, starting with one at the positive side each time. Thus, the lower the mean, the more positive the stereotype. This procedure enables us to put the groups in a rank order. In terms of absolute scores for the total sample, and from the most positive stereotype to the most negative, the rank order is: Canadians, French Canadians, Americans, Englishmen, Indians and Russians. That is, Canadians are seen as being closest to the positive end of the scale, French Canadians next, and so on. In view of the proximity of Canadians, French Canadians, and Americans, and in view of Canada's historical ties with England, this ranking of stereotypes is what we might have reasonably expected, as are the more negative stereotypes held for Indians and Russians.

TABLE II  
MEANS AND STANDARD DEVIATIONS FOR STEREOTYPING  
TEST FOR BOYS, GIRLS, AND TOTAL SAMPLE\*

	Boys M (N=70) SD		Girls M (N=62) SD		Total Sample M (N=132) SD	
Canadian .....	24.5	7.4	25.2	6.7	24.9	7.0
French Canadian .....	27.2	8.1	29.3	7.5	28.3	7.8
American .....	28.3	8.0	29.6	6.7	29.1	7.4
English .....	28.8	6.4	29.5	6.5	29.2	6.5
Indian .....	34.8	7.3	36.8	7.7	35.9	7.6
Russian .....	36.2	6.9	35.9	7.5	36.0	7.2
Total Test .....	180.3	30.0	186.8	29.6	183.9	30.0

\*1st administration.

To examine for differences between groups, a Friedman two-way analysis of variance by ranks (6, p. 166) was run and the resulting  $X^2_r$  of 45.1 found to be significant at beyond the .001 level. From this, we may assume that there were significant differences between groups. To examine for specific differences, t tests were calculated for differences between means. Taking the 5% level of confidence as significant, there were no statistically significant differences for boys and girls for either mean or standard deviations for the groups, or for the total test. Because of this similarity of response of boys and girls, only the total sample means were used for t tests of the significance of differences as between groups. Table III summarizes the results of these tests.

TABLE III  
SIGNIFICANCE OF MEAN DIFFERENCES BETWEEN  
GROUPS FOR TOTAL SAMPLE\*

	F. Can.	Amn.	Eng.	Ind.	Russ.
Canadian .....	0.5%	0.5%	0.5%	0.5%	0.5%
French Canadian .....		NSD	NSD	0.5%	0.5%
American .....			NSD	0.5%	0.5%
English .....				0.5%	0.5%
Indian .....					NSD

\*1st administration.

Perhaps the most noticeable finding presented in Table III is that Canadians was the only group concept perceived significantly different from all other group concepts. The term Canadians was apparently seen as significantly more positive than any others. The Indian and Russian group concepts were apparently perceived as significantly less positive in comparison with the other groups, although there was not a significant difference in the two. French Canadians, Americans, and Englishmen were seen as somewhat similar, for the means of these groups do not differ significantly from one another, yet these group concepts are seen as different from the others.

Tables II and III suggest that the six groups are in three "clusters" along the positive-negative continuum: Canadians being seen most positively and as different from the other groups; French Canadians, Americans and Englishmen being seen next most positively and as like one another but different from the other groups;



and Indians and Russians being seen least positively and as like one another but different from the other groups.

TABLE IV  
INTERCORRELATIONS FOR THE STEREOTYPING TEST  
BY TOTAL SAMPLE\*

	F. Can.	Amn.	Eng.	Ind.	Russ.
Canadian .....	.55	.62	.58	.31	.04
French Canadian .....		.45	.53	.43	.25
American .....			.53	.35	.07
English .....				.25	.24
Indian .....					.27

\*1st administration.

The intercorrelations presented in Table IV lend general support to the observation of three “clusters” within the six stereotypes. The concept Canadians is most highly correlated with the cluster already observed to be most like it, the French Canadians, Americans, Englishmen stereotypes. It has its lowest correlations with Indians and Russians. The lowest correlation between any two groups is that between Russians and Canadians, as we might expect, since these stereotypes are the greatest distance apart on the continuum. However, the intercorrelations do not present a picture completely consistent with the previously presented findings. The discrepancies observed (e.g., that Indians and Russians are not very highly correlated, even though they occupy nearly the same position on the continuum) may be better understood through an examination of the specific profiles of the various groups. Figures 1, 2, and 3 present the profiles of the six groups by total sample, the profiles being obtained by taking the means for various pairs of polar terms and plotting them. It should be noted, again, that the arrangements of the polar terms in the Figures is only for convenience in presenting the profiles. On the test itself, the polar terms were arranged randomly, there being a different arrangement for each group concept.

The profiles are presented in the three figures so as to correspond with the clustering tendency already pointed out. Perhaps the first point of significance concerning the profiles has to do with the similarities and differences in their shapes. Even though the overall Canadians mean is significantly different from the overall means of



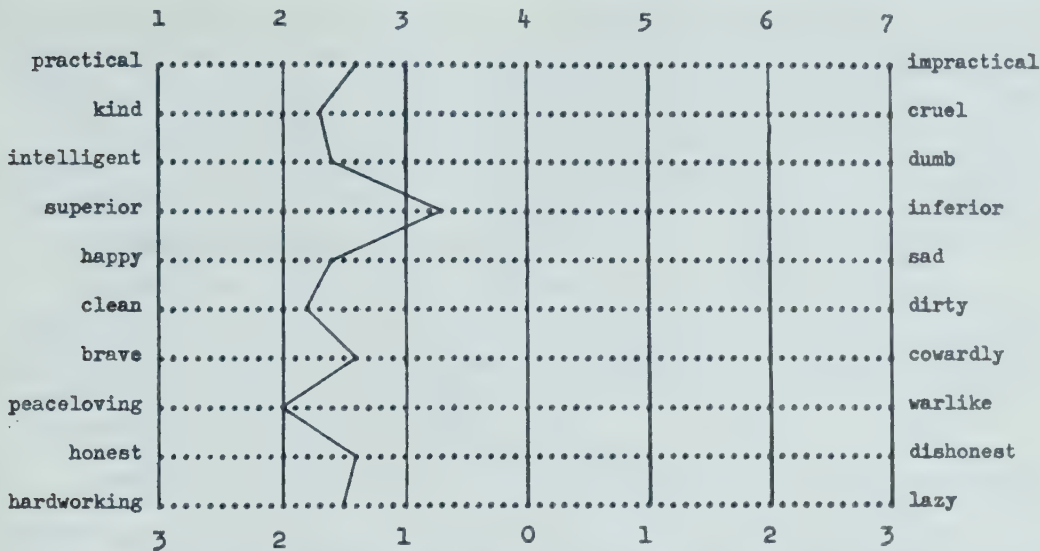


Figure 1. Profile for Canadians for the total sample of 132 boys and girls. This profile was derived by plotting the means of the categories for the first administration of the test.

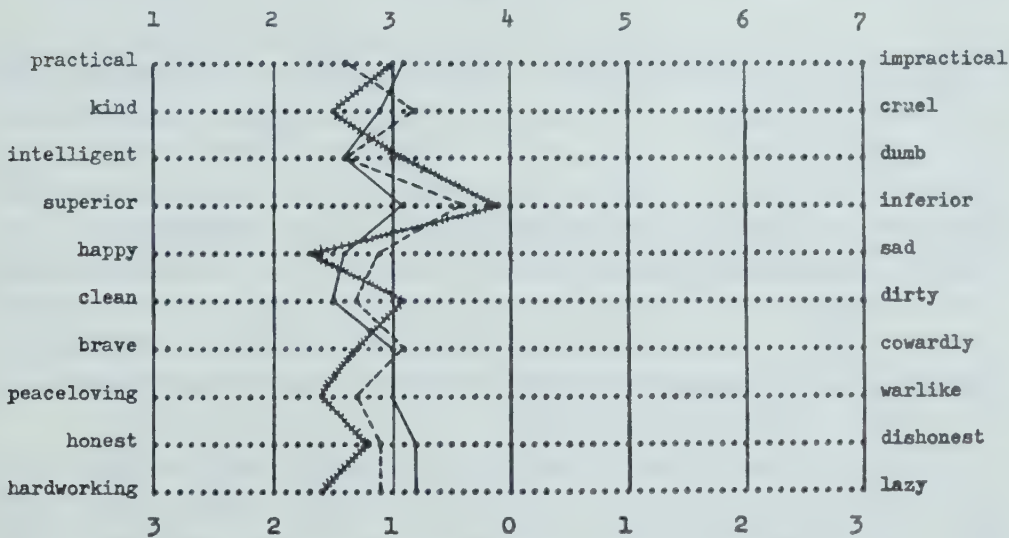


Figure 2. Profiles for French Canadians \*\*\*\*, Americans — and Englishmen ---- for the total sample of 132 boys and girls. These profiles were derived by plotting the means of the categories for the first administration of the test.

French Canadians, Americans and Englishmen, the shape of the Canadians profile is strikingly similar to the profiles of these groups. The similarity is particularly apparent as between Canadians, Americans, and Englishmen. Undoubtedly the most closely fitting profiles are those of the Americans and Englishmen. All four of these profiles have a sharp peak toward *inferior* on the superior-inferior category. At first, this makes little sense, considering that these groups are perceived as more intelligent, more kind, more practical, etc., than the other groups. Why then should there be such a peak

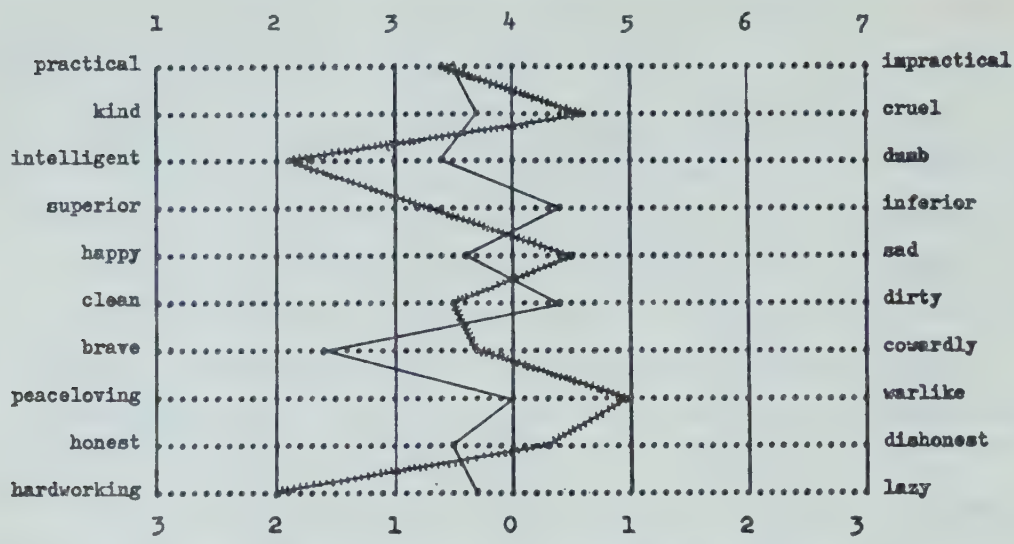


Figure 3. Profiles for Indians — and Russians ---- for the total sample of 132 boys and girls. These profiles were derived by plotting the means of the categories for the first administration of the test.

on inferior? It appears that this can be explained if we think again of the directions under which the test is taken. It will be recalled that in marking the test the middle of the scale indicates neutrality. It seems reasonable to suppose that while respondents are willing to mark terms such as clean, dirty, sad, etc., which describe rather specific characteristics, toward the ends of the scales, they are less willing to make sweeping judgments of groups, such as their being superior or inferior. The peaks on inferior probably really indicate a neutral feeling. It may be that the superior-inferior category is a different kind of dimension from the other categories, and is measuring something different from them.

An examination of the Indians and Russians profiles shows that even though these groups have almost identical overall means they have very different profiles from each other and from the other groups. The most variable profile of all the groups is that of the Russians, while the Indians profile is next most variable. The high peaks of these profiles seem particularly significant. We note that the Russians are perceived as the most extremely intelligent, hard-working, warlike, and cruel of the groups. The Indians are seen as the bravest. Thus, despite the fact that the perceptions of Indians and Russians are generally less positive than the perceptions of the other groups, these groups still have some quite positive attributes. Even though these groups occupy nearly the same mean position on the scales, they are perceived by pupils as distinctly different groups.

There is another interpretation possible for the Indians and Russians profiles, however, other than that they are generally more

negative than the other four. The overall means for Indians and Russians are 35.9 and 36.0 respectively, which indicates, from the directions for taking the test, that these overall means are nearly at the neutral position of the scale. It would seem that, from one point of view, the subjects of the study were less willing to judge these groups as positive or negative, the exceptions being where we find high peaks on the profiles.

The boys and girls of the sample can be said, in one sense, not to have made up their minds about the Indians and Russians concepts, except that these concepts are definitely not seen in as positive a light as the other four.

### Conclusions

The sample used in the study was composed of urban, middle class, ninth-grade pupils from a junior high school in Calgary, Alberta, and while this limits the generalizations we may make about pupil stereotyping behavior, as regards the population concerned, the following conclusions seem justified:—

1. There is probably no sex differential in relation to reliability of tendencies to stereotype: boys and girls at the age range of the ninth-grade appear to be equal in reliability over time and as between groups.
2. The stereotypes held by ninth-grade pupils in this study were rather unstable, indicating that they may fairly easily change or be changed. This seemed to hold true even for group concepts such as Canadians, where we might have expected a relatively stable stereotype.
3. There are probably no sex differences relative to the degree to which different groups are stereotyped.
4. Statistically significant differences were found between groups, but these differences tended to be in "clusters": Canadians had a mean stereotype score significantly more positive than any other group; French Canadians, Americans, and Englishmen were seen next most positively and more like each other than like other groups; and Indians and Russians were seen least positively and more like one another than like other groups. There were statistically significant differences between all of these "clusters".
5. Although different groups were perceived as having different stereotypes, there were some very regular similarities between stereotypes. It was found that the shapes of the profiles for the stereotypes of Canadians, Americans, and Englishmen matched closely. French Canadians, Indians and Russians had uniquely shaped profiles.



6. The study yielded one very positive finding. Even though the Indians and Russians concepts were seen as definitely less positive than the other concepts, they were not seen as extremely negative concepts. Actually, these concepts were rated as near the neutral position on the scales. This would seem to indicate that ninth-grade Alberta pupils do not feel negative toward any of the group concepts presented in the study. All of the stereotypes obtained are either neutral or positive.

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# THE EFFECT OF FOREIGN LANGUAGE BACKGROUND ON INTELLIGENCE TEST PERFORMANCE

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## The Problem

From the time of Binet until the 1930's most psychologists were content to measure intelligence primarily by means of verbal problems. The limitations of such an approach, however, soon became obvious. Jan Masaryk, who was to become the Secretary of Foreign Affairs for Czechoslovakia, is reported to have been classified during a childhood stay in the United States as a mental defective by a Binet test, presumably because of his lack of familiarity with the English language in which the test was administered (6). Conventional intelligence tests assume a certain facility with the English language and familiarity with an urban middle class culture, two conditions not always met in a bilingual community. If the means for assessing intelligent behavior are obstructed, the estimate of that intelligence is distorted.

The purpose of this study was to ascertain, for a sample of Edmonton Grade VII children, the effects of a foreign language background on intelligence test scores with a view to selecting economical measures of general intellectual ability which, first, provide a valid estimate of intellectual potential and second, provide minimal handicap to children with a foreign language background.

## Review of Related Theory and Research

Bilingualism, the use of more than one language by an individual, has long been recognized as an important factor in measuring the intelligence of children with a foreign language background. Over one hundred studies have been conducted in attempts to define the precise nature of this influence on the measurement of intelligence. Arsenian (3) in a review of the literature was able to sum up the major findings in the area by saying,

This summary points to the conclusion that bilingualism neither retards nor accelerates mental development, and that language handicap is most likely the factor responsible for the discrepancy between the performance of bilingual and monoglot children on verbal tests of intelligence. (p.74)

One variable that is important in the measurement of intelligence of bilingual children is the nature of the test employed. Numerous investigators including Pintner (23), Darcy, (8), Jones (14), and Altus

(1) have found that bilingual children score significantly lower on conventional verbal intelligence tests than do unilingual children. However, the discrepancy between the mean scores of the two groups is minimized when a non-verbal test of intelligence is administered. Hence, the salient conclusion that the conventional test of intelligence is biased against children with a foreign language background. The weakness inherent in most of these studies is pointed out by Anastasi and Cordova (2) who suggest that verbal and non-verbal intelligence tests may measure different functions. Relevant to this problem is Cronbach's (6) discussion of types of intelligence tests, in which he classifies tests on a bipolar continuum, on the basis of function. At one extreme are those he labels as "cold-blooded" predictors of school success. Empirical studies suggest that achievement tests and achievement-oriented intelligence tests are usually the best predictors of academic success for the majority of pupils receiving the relatively "fixed" treatment of standard curricula and teaching methods (4), (9). At the other pole Cronbach describes tests that are designed to tap "potential" and hence are only remotely concerned with immediate and specific prediction. This type of test would attempt to minimize the influence of previous educational attainments and accentuate the underlying mental power or learning ability. Tests fitting this description are generally regarded as having a high factorial loading on the general intellectual ability factor with minimal loading on verbal, numerical and other group and specific factors (19), (10).

The fundamental assumption underlying the use of this second type of instrument is what Cronbach and Gleser (7) term, "adaptive treatment" which vaguely resembles "mental orthopedics". That is, it is assumed that if an individual with high potential but a limited educational background or a cultural handicap is given appropriate adaptive treatment, his verbal intelligence and his subsequent educational achievements could be raised significantly. Support for this assumption is given by Sanchez (24) who, by providing remedial instruction in the language arts, was able to raise the mean IQ of a group of second grade Spanish-speaking children from 72 to 100 over a two-year period. Under such adaptive programs, it is plausible that the test which estimates potential ability will have greater predictive power than the conventional intelligence test.

MacArthur (20) suggests that when the teaching situation can be considerably adapted and when the criterion to be predicted is remote and general, as for example, in the elementary school, tests indicative of general intellectual potential would appear to be more useful for selection, placement and guidance.



Another implicit variable that has complicated assessment of the intelligence of bilingual children has been pointed out by Soffietti (25), who concludes that the retardation ascribed to bilingualism is due rather to biculturalism. "It is a conflict between ways of life, beliefs, customs, value systems and not necessarily one between language systems". More recent studies (11), (17) have stated more precisely the nature of this relationship.

Closely related to this cultural factor is that of socio-economic status which Jones (15) has shown to account for most of the difference between Welsh bilingual and unilingual groups on non-verbal tests of intelligence.

Finally, studies by Lambert and his associates (16), (18) at McGill have cast some doubt on the adequacy of the conventional Bilingual Rating Scales. Two problems present themselves. First, differences in bilingualism perhaps involves more than a quantitative difference. On the basis of Osgood's mediation theory (22), they have gathered some evidence that there may be a qualitative difference between compound and coordinate bilinguals. This difference may be reflected in intelligence test scores. Secondly, the assumption that the degree of bilingualism corresponds to the degree of bilingual background can hardly be justified (12).

The present study was concerned with the effects of foreign language background (which was considered to be essentially a pragmatic combination of bilingualism and biculturalism) on various tests of intelligence with certain known characteristics, in an attempt to select valid measures of the intellectual potential of children with a foreign language background. The two major criteria for the selection of valid instruments were first, a large loading on the general intellectual ability factor *g* with minimal group and specific factor loadings, and second, a minimal degree of relationship between test scores and language background. The study also investigated test relationships with school achievement and with *varying degrees* of foreign language background.

### Collection of Data

#### *The Sample*

The subjects for this study consisted of 432 Grade VII children drawn from three large Edmonton public schools selected to be typical of the Edmonton Grade VII population. Elley and MacArthur (10) have shown this sample to be representative of all Edmonton Grade VII children. On the basis of a Language-Background Questionnaire subjects were classified into four groups representing increasing degrees of foreign language background, and

matched on socio-economic status. N's for the groups were forty, thirty-five, thirty-three and twenty-two respectively.

Group I, the unilingual control, consisted of individuals who reported no language other than English used in the home. Group II reported a slight degree of use of a language other than English in the home; this group was excluded from most of the analyses on the basis that it was difficult to establish that it truly had a foreign language background at all.

Group III consisted of subjects with a moderate degree of familiarity with a foreign language. English was the major language used by this group but most of the subjects understood quite well and spoke part of the time a language other than English. Most of the subjects in this group were born in Canada and learned to speak English and another language concurrently during childhood. One-third of this group spoke Ukrainian or Polish and about one-quarter spoke German.

Group IV, the definitely bilingual group, consisted largely of subjects who, although they spoke English, had some other language as their primary language. Three-quarters of this group were classified as immigrants. One-half of the subjects in this group spoke German; the remainder spoke Ukrainian, Dutch, Yiddish or Norwegian.

Table I shows that Group I, III and IV were not significantly

TABLE I  
SIGNIFICANCE OF DIFFERENCES ON FOUR VARIABLES  
FOR THREE MATCHED GROUPS

		Group I Uniling.	Group III	Group IV Biling.	Obtained F or t	Level of Sign.
N		40	33	22		
Lang.-Back		0	2	3	F = 20.17	.01
Soc.-Ec. Status	Mean	47.20	47.47	45.64	F = 1.35	N.S.
	S.D.	4.93	5.53	5.79	$1.09 < F < 1.38^*$	N.S.
Sex	Male	18	12	10		
	Fem.	22	21	12		
	% Male	46	36	45	$.08 < t < .83^*$	N.S.
Age	Mean	13-0	13-3	13-7	F = 3.00	.05

\*More than one test was required, hence maximum and minimum values of F or t are recorded.



different on socio-economic status or sex; they were significantly different on Language Background scores and age.

### *The Tests*

Tests used in this study were administered by Elley and included the Raven's Standard Progressive Matrices, Cattell Test of "g" Scale 2, Lorge-Thorndike Non-Verbal Intelligence Test Level 4, Holzinger-Crowder Uni-Factor Tests, California Short Form Test of Mental Maturity—Elementary, and the Laycock Mental Ability Test; these are all generally acceptable, reliable "intelligence" tests. Socio-economic status was measured by the Blishen Index (5) and a Home Index Questionnaire.

A Language Background Questionnaire similar to Hoffman's (13) was devised for the purpose of this study. Since the units of the questionnaire were not truly interval in nature the scores were grouped into four crude categories. Evidence of the validity of the questionnaire was obtained by correlating the results of the questionnaire with a similar independent item from Elley's Home Index Questionnaire; this procedure produced a Pearson coefficient of .79. The retest reliability for sixty-four of these same subjects was found to be .98.

### **Analysis of Results**

1. (a) The extent to which the various tests met the first criterion of high *g* loading with low group and specific factor loadings had been previously examined through factor analysis. For a group of 271 of these same children representative of the Grade VII pupils of Edmonton Public schools, Elley (9) used the results from 21 tests in a principle components factor analysis. The loadings for sixteen of these tests on three major factors are presented in Table II.

An examination of columns 2 to 4 of this table shows that the tests most highly loaded with *g* and having negligible loadings on other factors are the Raven Matrices, Cattell Test of *g*, and the Figure Analogies subtest of the Lorge-Thorndike. These tests measure general intellectual ability apart from verbal, numerical or other educational skills. Such conventional measures as the CTMM Language and the Laycock have high *v:ed* (verbal:educational) loadings and, therefore, demand familiarity with the English language. The remaining tests, including the CTMM Numerical, and the Series tests from the Lorge-Thorndike and Holzinger Crowder, have significant loadings on the number factor and smaller loading on *g*.

(b) Agreement with the second major criterion, independence of language background, was studied by comparison of test means for the unilingual Group I and the bilingual Group IV matched on



TABLE II  
SUMMARY OF FINDINGS FOR SIXTEEN INTELLIGENCE  
TESTS MEASURED AGAINST SIX CRITERIA

(1) Test	(2) g Loadings	(3) vied Loadings	(4) n Loadings	(5) rp-bis with L-B	(6) Median r with School Mkcs.	(7) Mean r with Cal. Ach.
Raven Matrices .....	.78	.....	.....	-.02	.56	.41†
Cattell g .....	.79	.....	.....	+.04	.34	.35†
L-Thorn. Fig. Anal. ....	.74	.....	.....	+.15	.42	.39†
L-Thorn. Fig. Class. ....	.58	.....	.....	+.05	.31	.31
L-Thorn. Series .....	.55	.....	.40	-.10	.45	.41
L-Thorn. Total .....	.75	.....	.33	+.07	.43	.47†
Holz.-Crow. Spatial .....	.40	.....	.....	+.13	.....	.....
Holz.-Crow. Series .....	.46	.21	.45	-.14	.51	.49
Holz.-Crow. Fig. Cl. ....	.52	.....	.21	-.20	.40	.39
CTMM Spatial .....	.61	.....	.....	-.03	.....	.....
CTMM Logical .....	.66	.....	.....	+.34†	.....	.....
CTMM Numerical .....	.64	.20	.33	-.19	.....	.....
CTMM Verbal .....	.46	.66	.....	+.26*	.67	.66
CTMM Lang. Total .....	.58	.62	.....	+.26*	.38	.38
CTMM Non-Lang. Total ..	.62	.....	.35	-.07	.66	.65
CTMM Total .....	.....	.....	.....	+.16	.59	.64
Laycock .....	.63	.57	.....	+.33*	.....	.....

\*Correlations with Language Background significant at .05 level.  
‡Correlations with Language Background significant at .01 level.  
†Tests with highest value as measures of general intellectual ability for bilingual children.

socio-economic status, and by point-biserial correlation of language background with the various tests of intelligence for these two groups. Since the two approaches provided redundant information, only the point-biserial correlations of language background with each intelligence test appear in Table II. (Data from the difference of means approach are presented graphically in Figures 1 and 2). Examination of column 5 of Table II shows that certain of the non-verbal tests including the Raven Matrices, Cattell Test of g, Lorge-Thorndike Figure Classification and the CTMM Spatial were found to be independent of the language background of bilingual children.

Conventional verbal intelligence tests including the CTMM Language and the Laycock showed a significant correlation with language background; foreign language background was related to lower verbal test scores. Non-verbal tests highly loaded with the number factor were negatively correlated though not significantly

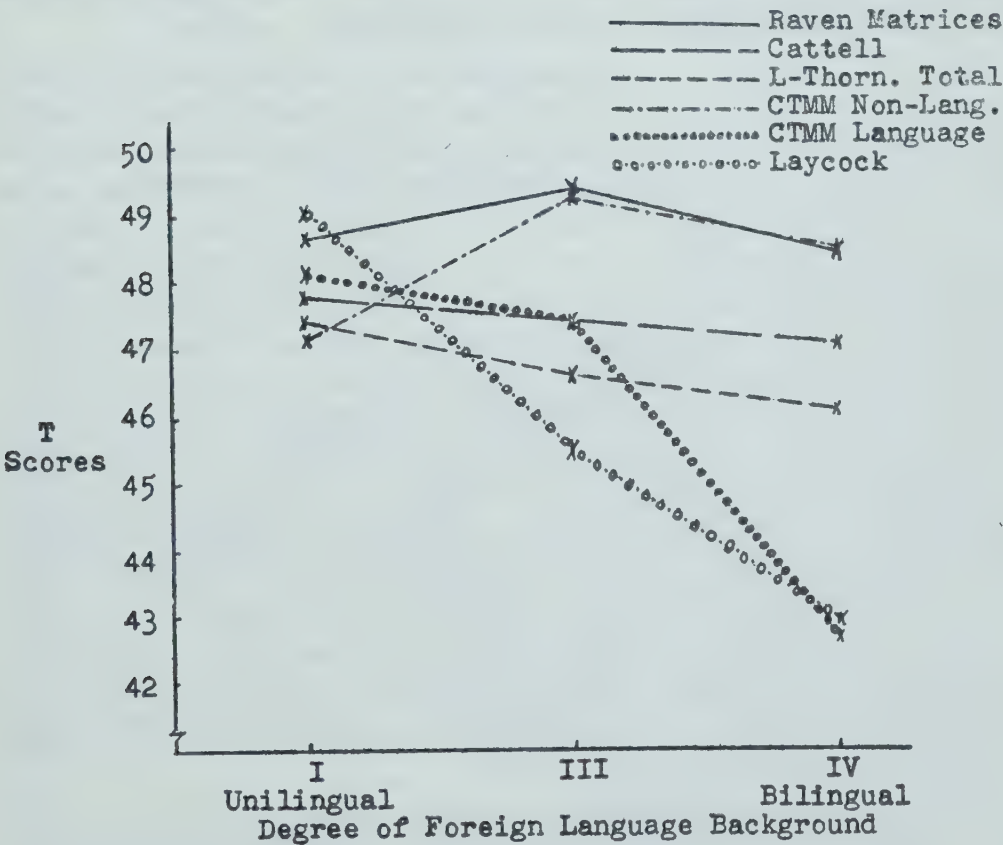


Figure 1  
Relationship Between Degree of Foreign Language Background and Mean T-Score on Six Representative Intelligence Tests

with foreign language background; foreign language background was related to higher test scores.<sup>1</sup>

(c) Other criteria of lesser significance used in the selection of instruments for the valid intellectual assessment of children of foreign language background included correlation of test scores with achievement scores (see Table II, columns 6 and 7), changes in IQ over a four year period, and a consideration of face validity.

2. In an attempt to examine more closely the nature of the relationship between *degree* of foreign language background and various intelligence test scores, T-scores, based on the entire Grade VII sample, for each of six intelligence tests were plotted for each of Groups I, III and IV. Figure 1 depicts the relationship between degree of foreign language background and mean T-score on selected intelligence tests.

An inspection of this graph shows that the general trend found in other studies is maintained here. Edmonton Grade VII bilinguals scored significantly lower than unilinguals on verbal tests while on non-verbal tests no differences were significant.

This comparison is limited by the fact that the groups do not have equal mean ages, the unilingual group being seven months younger than the bilingual with the middle group in between. A crude attempt to take this age differential into account was made by converting the mean raw score on each test to a mean IQ for each group by using the mean C.A. and the publishers' norms. Since the IQ's are based on publishers' norms they are not strictly comparable, only trends are dependable. By combining the two estimates of verbal IQ and the four estimates of non-verbal IQ a more stable comparison was facilitated. Moreover, the effect of increasing degrees of foreign language background on intelligence test scores becomes clearer by including Group II which has a slight degree of foreign language background. Figure 2 shows the relationship between degree of foreign language background and performance on verbal and non-verbal tests in general.

From an examination of Figure 2 it may be tentatively concluded that intelligence as measured by verbal tests is a curvilinear function of the degree of foreign language background and not a linear one as suggested earlier.

The effects of compound versus coordinate bilingualism proved to be untestable for this sample since the compound versus coordinate dichotomy coincided with that provided by the classification of immigrant versus non-immigrant, which in turn coincided with the

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<sup>1</sup>This unusual finding was attributed to the fact that the bilingual group was seven months older on the average than the unilingual group and hence had had more school experience with the almost universal Arabic number system.



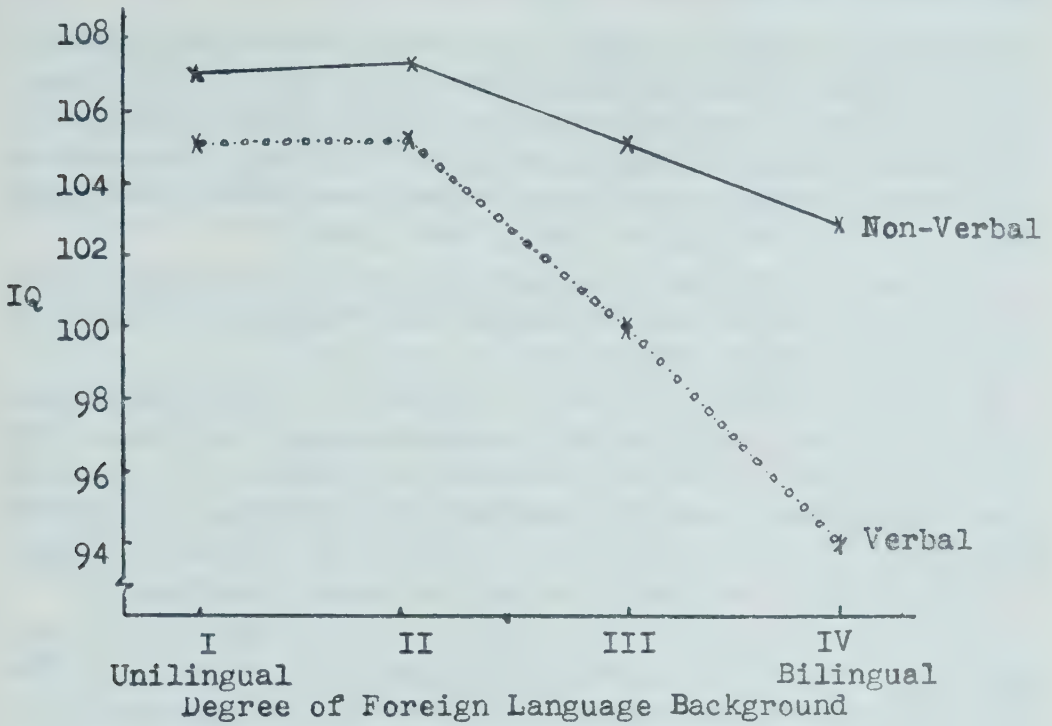


Figure 2

Relationship Between Four Categories of Increasing Degree of Foreign Language Background and Mean IQ on Verbal and Non-Verbal Tests

classification provided by scores on the Language Background Questionnaire.

### Conclusions and Implications

In this study four groups having progressively increasing foreign language background, and all matched on socio-economic status and sex, were drawn from a larger sample representative of Edmonton Grade VII pupils. Performance of these groups on selected intelligence tests was examined with a view to selecting measures likely to be most useful in assessing the intellectual potential of pupils with a foreign language background.

1. The Standard Progressive Matrices, the Cattell Test of g, and the Lorge-Thorndike Figure Classification, in that order, best met the criteria of (a) high loading on a general intellectual ability factor, with negligible group factor loadings, (b) no significant relationship with foreign language background, and (c) moderate relationship with school achievement. The Matrices Test also met the criteria of face validity and relative stability for bilingual children over the period Grade III to Grade VII.

2. Even with socio-economic status held constant, the conventional verbal intelligence tests studied handicapped the pupils of

considerable foreign language background. For pupils with a moderate foreign language background, those who use a language other than English less than one-half of the time, conventional verbal intelligence tests presented no significant handicap. The relationship between scores on such tests and degree of foreign language background was curvilinear, rather than linear.

3. In general, this study supports the position that *g* is a useful construct and that it can be assessed relatively independently of verbal or other cultural factors.

4. It would appear profitable to employ one of the three tests validated in this study for the classification and grouping of bilingual children. Moreover, selection of children for intensive adaptive treatment could be based to some extent on results from these tests. Finally, experiments requiring an estimate of intellectual potential should make use of these non-verbal tests.

Further evidence now needs to be gathered regarding the empirical and practical usefulness of measures of the construct *g*. One of the main assumptions underlying the validity of this construct is the possibility of adaptive treatment and its relationship to general intellectual potential. What adaptive treatment beyond that now given in the schools is feasible? Is adaptive treatment more effective for children of high or of low intellectual potential? Do measures of intellectual potential have superior predictive power if used prior to adaptive treatment? The answer to these questions may well determine the approach adopted towards intellectual assessment, and the use of test results, in the future.

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# A BASIC COMPUTER PROGRAM LIBRARY FOR FACTOR ANALYTIC STUDIES

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With the establishment of computing centers by many universities, an increasingly greater number of social scientists are considering more refined experimental designs solvable only with the aid of high-speed computers. The initial perplexing problem is one of determining what programs should be written first. This paper will consider two facets of the problem: (a) what are the minimum essential programs needed, and (b) what characteristics should the programs embody for maximum flexibility?

Although the author does not wish to enter a full length discussion concerning the various types of computers, it is essential that the reader have some familiarity with the manner in which the typical computer operates. The reader unfamiliar with the general operation of computers might refer to Berkeley and Wainwright (1) or Chaplin (6) for this information.

Any digital computer may in its simplest form be considered conceptually as a combination of four units: input, accumulator, memory, and output. The input section of the computer is that device which reads the data from either punched paper tape, cards, or magnetic tape. Generally speaking, the modes of output are identical to that of input. Most computers that are available to the social scientist require that the data be punched either on paper tape or on cards. There are distinct advantages to both systems of entering data, but the advantages and disadvantages must be weighed in terms of the computer and auxiliary equipment available. Punched paper tape does not usually lend itself to the addition or to the removal of data without complete reperforation. It is however easy to store and handle, and affords few problems of jamming when being read by the computer input mechanism. Punched cards on the other hand, while perhaps more susceptible to mechanical input problems, lend themselves to removal and addition of data very readily. Punched cards containing data facilitate such analyses which involve partitioning the information. Although most computers today input and output data via paper tape more slowly than when using punched cards, current developments indicate that tape may be faster in the future. Social scientists should seriously consider the nature of their problems and make representation to those concerned before purchase of computing equipment is to be made.

Frequently desk computers can also output information directly via a typewriter. The latter is not particularly suitable since the only record of the output is in a form not compatible with methods of inputting this information for future processing. It is therefore preferable to have information output via a more permanent record such as paper tape or punched cards.

Although the exact needs of the social scientist will vary with the particular types of problems of interest, the author's experience with Illiac<sup>1</sup> has shown that the following programs should be written during the initial phase in the development of the basic library.

1. Correlation coefficients, including regression coefficients, covariances, means, and standard deviations.
2. Matrix algebra operations such as addition, subtraction, multiplication, transposition, inversion, and latent root and vectors.
3. Factor analysis operations such as the diagonal, centroid, and principal components methods of factoring, and linear transformation (rotation).

The correlation program should be a product moment correlation, in order that a Gramian matrix be obtained—a necessary condition for certain matrix problems. The maximum number of variables that the program should handle is in the order of 70, and the maximum number of observations about one thousand, although this will vary with individual requirements. Data should be input in such a way that all variables for one subject are read in together and that the computation of sums, sums of squares and cross products follows. The same sequence of operations is observed for the next set of observations. In this manner, maximum use is made of computer memory space. The data should be output in such form that the tape or cards can be used for input again for further analysis, e.g., inversion or factor analyses. Indicating the output format necessitates the use of certain parameters which are given to the computer for suppression of specific computations. This is very important if the output is via paper tape. If the correlation coefficients are intermingled with regression coefficients on the tape output (as would be the case if both coefficients appeared in columnar form side by side) use of this tape for input becomes burdensome. In this case, suppression of the regression weights, or a printout at the end of the tape, is most useful.

The problem of having the program perform simple data checking steps should be seriously considered. The correlation program should check to determine whether the correct number of variables has been input for each subject. This may be accomplished by

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<sup>1</sup>The University of Illinois Digital Computer.



having this information precede the observations. Suitable program stops should be included in order that the operator can immediately determine the cause of any error—in addition to being able to correct the error and continue computation. If for some reason a correction cannot be made immediately, the operator of the computer should have the option of extracting all the computed sums of squares, cross products, and sums so that this information can be read in later when the correction has been made, thus saving considerable computer time.

In summary, the correlation program should be a product moment correlation in which the covariances, correlations, means and standard deviations can be output. The calculations output and their format, i.e., square, upper or lower triangular, should be determined by the initial parameters input. Suppression of certain computations may be necessary to facilitate data input for the next analysis. The correlation program should also provide a number of checks upon the data. The usual checks are for incomplete data, zero variance, and scaling errors. When any error occurs information indicating the nature of the error should be output. Provisions should also be made for removing from the computer the sums, sums of squares, and cross-products if any error does occur. It should be possible, after correction of any error, to have the computer begin computation where it left off. Finally, the correlation program should output unities in the diagonal elements.

Matrix algebra programs are indispensable to the social scientist primarily because many statistical and data analysis problems can be most readily interpreted and handled in this short-hand notation. Such problems as multiple regression, discriminant function analysis, and analysis of variance can be handled with greater ease using this system (7). In addition to a matrix inversion program, matrix addition, subtraction, and multiplication programs are required. The addition and subtraction programs are quite straight forward and usually involve no problems except perhaps ones of scaling. The error checks suggested here would be those of conformability for the arithmetic operation involved. To save space in the computer memory, only the one matrix need be held at any one time—the addition or subtraction proceeding as each row or column is read from tape or card. In the case of the matrix multiplication program a row by column multiplication is required. As with the addition and subtraction program the computer should check for conformability of the matrices and that each row or column contains the same number of elements. Most cases of overflow can be caught by checking the sign of the product after a multiplication. If overflow does occur provisions for automatic rescaling are very



useful. The number of decimals in the output is a useful variant which may be introduced by a parameter preceding the first set of data. In addition, provisions should be made for retaining the product matrix within the computer memory for further calculations, e.g., to form the matrix product  $ABC$ .

Another useful matrix operation is that of obtaining the transpose of a matrix. This step is necessary if one desires to form the matrix  $AA'$ , which will contain the sums of squares in the diagonals and the sums of cross products in and off diagonal positions.

Mathematically, the calculations of an inverse of a matrix is of fundamental importance and no computing center can operate without such a program. As with the other programs, provisions for specifying the number of decimal places in the output, and the format (by rows or by columns) of the output should be possible. In addition the program might incorporate provisions to find  $AA^{-1}$  if a check is desired on the adequacy of  $A^{-1}$ . There are a number of different ways an inverse might be computed: (a) by Gaussian elimination, (b) by reduction to zero of the rows and columns (with the exception of the diagonal elements which are to be unity) and a similar operation upon an identity matrix, and (c) through the diagonal method of factor analysis(8). The latter method is suggested if the programmer is not experienced. In most instances the computer company can supply an inversion program. The only problem which may be encountered is that a matrix (say of correlations) may not be in a form compatible with the input of the inversion routine in terms of format and scaling.

A very useful program involving matrix algebra requires the solution of the characteristic equation  $(A - \lambda I)x = 0$ . This problem is also referred to as one of finding the eigenvectors and eigenvalues, the latent vectors and latent roots, or the characteristic vectors and roots of a symmetric matrix. The latent root and vector problem is one that arises not only in problems of analysis of variance(11), but also in discriminant function analysis(7), analysis of learning curves(22), and in factor analysis (10,21). In the latter instance the principal components are within a scaling factor of the latent vector,  $\lambda^{1/2}$  if the latent vectors are normalized. Thus a principal components factor analysis can be effected with such a program. The program is also necessary when one matrix is being approximated in the least squares sense by that of another matrix of lower rank(9). It is suggested that a program such as this be acquired from the firm from which the computer has been purchased. If however one does want to program such a problem, Bodewig(2) or Harmon(10) are excellent sources for determining which procedures might best be used.

With the access of computers to many social scientists problems of factor analysis involving a relatively large number of variables becomes possible. It is suggested that three programs be considered for factoring a correlation matrix: (a) the diagonal or square root method; (b) the centroid method, and (c) the principal components method. It is suggested that either the centroid or the principal components method be developed first. The principal components solution is most preferable because the maximum amount of variance is extracted with each factor. The centroid method, although basically very easy, presents problems of reflection. The centroid program should be written to accept the output from the correlation program. Options should be made available for the user to introduce communalities other than unities provided by the correlation program, specify the number of digits in the output, indicate the number of factors to extract, print out a record of the variance accounted for by each factor extracted, and to output the residual matrix. The latter case also implies that if further factors are to be extracted a record of the reflection process must also be output. Provisions should then be made to re-enter the residual matrix and the record of reflections in order to continue extraction of factors. Care should be taken to ensure that the output from this routine is compatible with any program for analytical transformation (rotation).

If at all possible a principal components solution should be used (15). Two methods might be considered, the first based upon a sine-cosine transformation outputting the latent vectors and roots, or the principal component factors directly, and the second based upon Hotelling's iterative method. If the former is contemplated, an existing latent root and vector program might be modified, or one be written according to the flow diagram provided by Harmon (10). A number of distinct advantages exist for both types of solutions. Hotelling's method is easier to program and provides the first few vectors quickly. However, the rate of convergence becomes quite slow when the ratio of successive latent roots approaches unity. In this method therefore, the time can not be accurately specified. One marked advantage of Hotelling's method rests in the fact that it outputs the vectors in order of size in contrast to obtaining all the roots and vectors simultaneously as in the sine - cosine or Jacobi method.

In programming the Hotelling method thought should be given to retaining only the upper or lower triangular form of the correlation matrix in the computer. This complicates the problem of generating the addresses of the elements but saves a considerable amount of memory space. Provision should also be made to enter com-



munalities in the diagonal elements. Thomson (20) provides a desk calculator plan for solution of this problem, but it should be modified for use in the computer. The author has found that normalization of the approximated vectors solves most of the scaling problems, and in addition provides an easy method for testing convergence. Testing for convergence may be made by finding the inner product of the two successive normalized trial vectors. This scalar will be the cosine of the angle between the two vectors in a two dimensional space. When the convergence is within some a priori tolerance, e.g.,  $\phi = 0.5$  degrees and cosine  $\phi = 0.99996$ , convergence can be said to have occurred. Since upon convergence the desired vector is normalized,  $\lambda$  must be found using  $x'Ax$  before the desired principal components vector can be obtained. Because this method outputs the vectors in descending size, it is very easy to incorporate a criterion for terminating the factoring process. It has been suggested by Kaiser (15), and Michael and Hunka (17) that the factoring process stop when the latent root becomes smaller than unity—the maximum amount of variance which might be contributed by an individual test when unities are used as communalities. When the squared multiple correlation is used (Guttman's lower bound estimate to the communality) factoring could be stopped when the last calculated associated latent root is negative. These criteria are more difficult to use when all vectors are obtained simultaneously as is the case using many of the programs based upon the Jacobi method.<sup>2</sup> Output should be of such a form as to be compatible with any analytic transformation program. In addition the residuals should be output in a form acceptable by any other factor analysis program.

The selection of the transformation or rotation criterion is one that must be based upon the purposes of the investigator and of course, upon psychological meaningfulness. It is very difficult to state explicitly which criterion should be employed. Basically the criteria may be divided into two categories: (a) orthogonal transformations (reference system is orthogonal), or (b) oblique transformations (reference system is allowed to approach some a priori degree of obliqueness). Much discussion has resulted concerning the meaningfulness and applicability of linear transformations (4,5,12,18,23). It is suggested that initially an orthogonal transformation be programmed for a first reason that this transformation can form a basis for further oblique rotations, and for a second and perhaps more important reason that it is very simple to programme.

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<sup>2</sup>This problem could be overcome if in the initial phase of the latent root and latent vector program the  $\lambda$ 's were obtained first. The vectors corresponding to the  $r$  largest roots might then be selected.



The most useful orthogonal transformation from the point of view of ease of programming and psychological meaningfulness is Kaiser's Varimax criterion (12). This criterion maximizes the variance of the squared elements by columns after each test has been corrected for uniqueness. A comparison of this method with others on the PMA matrix of correlations has been provided (16). A flow-type description of this program has been prepared for the computer coder (14). It is strongly suggested that this analytic criterion be the initial orthogonal transformation program written.

The problem of oblique transformation can be considered as one for the experienced computer programmer. Solutions in this case are infinitely more difficult than those in the orthogonal case. Although there are a number of criteria which are zealously advocated by their proponents (3,4,5,13,19) the author's experience suggests that the Oblimax criterion (19) or the Kaiser-Dickman (13) be considered first. Comparison of these two with other criteria are well presented in Harmon (10). Since these programs are difficult to write they should be attempted only after a critical study of their limitations and biases.

### Summary

In writing this paper the author has been prompted by numerous requests from researchers in education and psychology as to what programs should form a minimum computer library for much of their work. A number of programs have been suggested including a discussion of the desirable characteristics which each should incorporate. In general, care should be exercised so that the programs in the library be compatible with each other for purposes of sequential analyses of data. This includes considerations of input and output options in addition to the use of meaningful error stops.

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# AN EXPERIMENTAL APPLICATION OF THE CONCEPTS OF IMAGE AND PLANS TO THE COUNSELING SETTING

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The concepts of Image and Plans as used by Miller, Galanter and Pribram(2) are an attempt to link the response with the stimulus. The reflex arc was rejected as the basic building block of behavior because of its failure to account for the intervening variables. Instead of the reflex arc, a new comprehensive explanation, involving Images and Plans was formulated, which would link behavior directly to the cognitive processes.

While previous cognitive theories had narrowed the gap between stimulus and response, a certain gap, which still needed to be considered, remained. In their quest for a new model, they turned to a computer analogy, coining the psychological terms of Image, Plans, and TOTE (Test, Operate, Test, Exit) which are analogous to memory, programs, and the test negative of the computer.

## The Theory

According to the theory, the personality is composed of a dynamic, evaluative Image and nondynamic Plans. While Image and Plans are defined separately, they must be considered operationally interdependent rather than independent entities.

*Plans.* Miller, *et al.*(2), define a Plan as "any hierarchical process in the organism that can control the order in which a sequence of operations is to be performed." It is used to designate any rough sketch of action, including not only the general outline but also the details. The molar units of behavior are called strategies while the molecular units are called tactics. The Plans are a hierarchical list of instructions which must be executed in a manner very similar to the verbal directions given during the acquisition of a new skill.

*The Image.* The Image is the individual's internal representation of his world, organized in a unique manner according to his values and experiences. The term Image is used to designate a private representation of himself and his world rather than mere imagery. The Image controls the execution of Plans by its numerous TOTE hierarchies which test the appropriateness of each phase of operation. The information and values of the Image serve as

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standards against which the Plans are measured. The information and values are incorporated into the Image by the execution of information processing and storing Plans. The storage and recall of information is facilitated by the use of verbal labels.

*The TOTE.* In order to facilitate the integration of Image and Plans, a TOTE (Test, Operate, Test, Exit) mechanism was also postulated by Miller, *et al.* (2). The TOTE may be considered to be analogous to a feedback without any connotation of reinforcement or values. It is merely a testing device whereby an act cannot be executed before it has been tested for relevance. It should be considered as a servomechanism, not only stopping behavior when certain conditions exist, but also initiating behavior when other conditions are present. Thus, these units would not be isolated but organized into a hierarchy, having relevance at both the strategy and tactic levels of behavior.

### Problem and Hypothesis

Miller, *et al.* (2), report that the usual complaint of people seeking therapy is the inability to choose between incompatible Plans or that they are guided by irrelevant ones. This state of Planlessness or inadequate Plans is accompanied by emotions. The amount of emotion present seems to be directly related to the extent that their personal Plans are frustrated.

They further suggest that hypnosis may be induced by confusing the Planner and therefore the subject is willing to accept the Plans of the hypnotist. However, the failure of the Plans may also be due to defects in the Image. It may be that a Plan is infeasible not only because of Plan inadequacy but because of informational paucity in the Image. Likewise, if the Planner can be confused during hypnosis, may not also the testing phase in the Image be likewise confused? This reasoning can be further pursued by asking whether the Plans are inadequate because of a confused Planner or because of a disruption of the testing aspects of the Image? At present, the answers are not apparent. Therefore, in order to determine the efficacy of these concepts, attempts will be made to interfere with the Image and Plan separately and together.

Since according to the above discussion, prediction of results is not possible as to which measures will be affected by a specific treatment, the following exploratory hypothesis will be tested: Interference with the Plan, Image, and Plan and Image combined will result in different personality changes as measured by various personality tests.

## Experimental Design

### *Subjects*

The sixty-six subjects for the experiment were drawn from two introductory classes in Educational Psychology and randomly assigned to three experimental and one control groups. The sample consisted of 20 male and 46 female subjects ranging in age from 17 to 51 with a mean age of 21.3. On the ACE, the individual group means did not differ significantly. In keeping with the terminology of Miller, *et al.* (2) the experimental groups were designated Image, Plan and Plan-Image groups, indicating the treatment which was to be given.

### *Treatment*

The treatment in each group had a special point of reference corresponding to the notions of Images and Plans. The topics or areas for discussion in the three groups were kept parallel as much as possible in order to minimize the effect of content. Various inter- and intra-personal problem situations, which were considered relevant to the majority of the subjects, were discussed. These topics centered around various familial, peer and school problems. Each topic was reworded to meet the requirements of each experimental group. The meaningfulness of the discussions was soon evident since many subjects had or were experiencing the stress at the time of the sessions. This helped to sustain interest and arouse active participation. The groups met weekly, except for practise teaching periods, for 15 weeks during the regular University year.

*Image Group.* The discussion focused on the Image, namely its values, concepts, and beliefs. An attempt was made to exclude any consideration of the individual's Plans. Each subject was continually directed to imagine that he was experiencing the stress and therefore was to try an evaluation of the experience as it appeared to him. He was then asked to describe or express his own Image with respect to his concept of personal worth, competence, acceptability, and integrity. Once the threatened self was verbalized, he was directed to change this evaluation of himself. An alternative self image, a miniature self image to be sure, was suggested by other members of the group. The various alternatives were not evaluated according to good or bad, nor to effectiveness or appropriateness in our society. The emphasis was not only on discovering alternatives which might be held under similar circumstances, but also on changing the self image. During the discussion, the experimenter helped make the present Image explicit and directed them in its change. Subjects were also encouraged to think differently about themselves during the other days of the week.



They were encouraged to verbalize their Image by recording it in a personal diary.

*Plan Group.* The focus of attention was the individual's Plans for meeting various life situations. Any direct or indirect consideration of the Image was carefully avoided. The subjects were first asked to make explicit Plans for meeting the stress situations which paralleled those described above. Secondly, the members were asked to create new Plans for meeting the same situation. No evaluation was placed upon these alternative Plans; they were merely to be different. Then as a group, new Plans for behavior were formulated and spelled out in detail. It was discovered that it was easier to speak in molar rather than in molecular terms. However, some proficiency in breaking the strategies into tactics was achieved. As in the Image group, the members were asked to record their own typical behavior and were encouraged to Plan and try new ways of meeting these situations during the week.

*Plan-Image Group.* As the name implies, a balance between Plan and Image treatment was attempted with this group.

### *Tests*

The following tests were administered both before and after treatment. Where more than one score was obtainable from an instrument, the various scores will be indicated.

- (1) Rokeach's Dogmatism Scale (4)
- (2) Rokeach's Opinionation Scale (4)  
Political left, right, and total opinionation scores.
- (3) Edwards' Social Desirability Scale (1)
- (4) Schaie's Test of Behavioral Rigidity (5)  
Three Rigidity Factor Scores and Total Rigidity.
- (5) Butler-Haigh Q-Sort (3)  
Self-Acceptance and Adjustment scores.

## **Analysis of Data and Results**

### *Statistical Procedures*

The differences between pretreatment and posttreatment scores for each individual were obtained for all the variables and a t test of the differences was computed for each group to discover if any changes within the groups had occurred. Analysis of Variance of the differences were also calculated to discover differences between groups. The Hartly F test for k samples was made to test the homogeneity of the variances. (6)

A rank order correlation was used to correlate the Self and Ideal Q-Sorts. The rank order correlations between the Q-Sorts were transformed to Fisher's z's for further treatment.



TABLE I  
CHANGES IN MEANS, STANDARD DEVIATIONS OF  
DIFFERENCES AND t's FOR FOUR GROUPS OF  
ELEVEN VARIABLES

Group	Image n = 16			Plan n = 17			Plan-Image n = 16			Control n = 17		
Variable	$\bar{d}$	s	t	$\bar{d}$	s	t	$\bar{d}$	s	t	$\bar{d}$	s	t
DOGMATISM	-8.25	18.0	1.83	-1.90	20.8	.37	-3.80	23.1	.66	-4.60	14.6	1.30
OPINION T	-3.68	18.1	.82	-8.70	16.2	2.21*	-5.31	14.2	1.50	1.65	22.8	.30
OPINION L	1.20	13.0	.37	-2.20	12.2	.89	-2.10	5.9	1.42	5.40	15.1	1.46
OPINION R	-4.80	13.1	1.46	-6.50	9.60	2.79*	-3.10	10.3	1.20	-3.50	14.5	1.00
EDWDS SDS	.63	3.9	.66	-.82	2.6	1.30	-.56	4.0	.57	-.24	3.4	.29
TBR MC	1.30	6.6	.78	2.10	7.0	1.23	4.75	10.7	1.77	4.00	8.3	1.99
TBR PP	-1.60	5.7	1.12	.50	6.0	.35	-2.10	3.6	2.35*	-.20	7.7	.11
TBR PS	6.30	4.5	6.02†	5.90	4.4	5.51†	7.40	3.9	7.63†	3.94	5.1	3.18†
TBR COMP	2.10	3.1	2.73*	2.50	3.9	2.60*	3.30	4.5	2.95†	2.70	4.8	2.33*
ADJUSTMENT	2.50	5.9	1.70	4.20	7.40	2.35*	4.20	7.7	2.18*	1.40	6.5	.89
ACCEPTANCE	9.63	15.8	2.44*	20.41	22.3	3.79†	17.31	18.7	3.70†	4.76	14.8	1.33

\*sig. @ .05  
†sig. @ .01  
‡sig @ .001

### *Changes within Groups*

Using the difference method, the mean differences between pre- and posttreatment scores for each group were calculated. The mean differences, standard deviations of the differences, and the *t*'s for eleven variables are given in Table I.

For 15 degrees of freedom, the *t* had to be 2.13 and 2.95 to be significant at the .05 and .01 levels. No significant changes for any of the groups were found on the Dogmatism, Left Opinionation, Edward's Social Desirability, and Motor-Cognitive Rigidity Scales. Only the Plan group changed significantly on both Total and Right Opinionation. All the groups showed a considerable decline in Right opinionation with the Plan group change approaching significance at the .01 level.

Performance of all groups changed significantly on the TBR Composite score. The Image-Plan Group mean difference was significant at the .01 level and the other three at the .05. On the Psychomotor-Speed factor, the mean differences were significant well beyond the .001 level for all three experimental groups but only at the .01 level for the control.

On the Personality-Perceptual Rigidity factor, the Plan-Image group changed significantly in the direction of greater rigidity. However, the variance of this group was significantly less than the other three. The means of the Plan and control groups remained relatively stable while the Image group also tended toward greater rigidity. The unequal variances, however, make the results somewhat ambiguous and further comparisons hazardous.

Significant changes in self acceptance were found in the three therapy groups. The Plan and Plan-Image mean differences were significant well beyond the .01 level while the Image mean difference was significant at the .05. The subjects in the Plan and Plan-Image groups showed much more self acceptance after treatment than before.

The significant increase in the correlations between the Ideal and Self Q-Sorts which indicated greater self acceptance, could not be attributed to a lowering of the ideal concept. The Adjustment means increased for all four groups but only the Plan and Plan-Image groups changed significantly. While all groups changed toward better adjustment, the order followed the same pattern as that established on the Self Acceptance scores, the Plan group changing the most and the Control the least.

### *Differences between Groups*

Except for the Psychomotor-Speed factor and the Self Acceptance scores, the *F* ratios were less than 2.00 and far from significant.

ance. The  $F$  of 2.72 for the Self Acceptance measure was just short of the 2.76 needed for significance. However, since the  $F$  was so near significance at the .05 level, the differences between means quite large, the  $F$  was treated as if significant. A difference of 12.36 between means was significant at the .05 level. Both the Plan and Plan-Image means differed significantly from the control mean. The difference between the Plan and Image means approached significance at the .05 level.

### Discussion

Since the groups differed significantly only on one of the 12 measures, the general hypothesis that differential treatment would result in measurable differential results was not supported. Although the analysis of variance did not support the hypothesis, an examination of the various within-group changes indicated a possible trend. The Plan group changed significantly on six scales, the Plan-Image on *five*, the Image on three, and the control on two. However, it should be noted that all four groups changed significantly on two scales, namely the TBR Psychomotor-Speed factor and Composite score. In both cases, the control means changed the least. Any changes in the Image group were duplicated by both the Plan and the Plan-Image groups at either the same or even higher significance level.

One finding with special relevance to the Image-Plan paradigm is the change in means of the Plan and Image groups on the Dogmatism and Opinionation Scales. These changes are quite consistent with the theory.

Since beliefs are part of the Image, the Dogmatism Scale should be sensitive to changes in the Image. If the treatment was effective, the Image group would be expected to change the most. The mean difference of  $-8.25$  was significant at the .10 level. The mean difference of the Plan group was not significant.

The Plan mean difference of  $-8.70$  on the Opinionation Scale was significant at the .05 level. The mean difference of the Image group was not significant. This finding would suggest that the Opinionation Scale was more related to Plans. If intolerance is measured by the degree to which people are accepted or rejected because of their beliefs, the Opinionation Scale might be a measure not only of intolerance but also of the availability of Plans to meet people with different beliefs. However, since the differences between groups were not significant, the results only suggest an interesting possibility which should be investigated further.



## Summary and Conclusions

### *Summary*

1. By an analysis of variance of the differences, it was found that the groups differed only on the Self-Acceptance score. The Plan and Plan-Image groups differed from the control.

2. None of the within-group differences were significant on Dogmatism, Left Opinionation, TBR Motor-Cognitive Rigidity Factor, and Edwards' Social Desirability Scale.

3. All four groups changed significantly on the TBR Psychomotor-Speed Factor and Composite Score. The Plan-Image group changed the most on both measures and the control the least.

4. On the Self-Acceptance Scale, the Plan and Plan-Image groups changed significantly at the .01 level and the Image group at the .05.

5. Both the Plan and the Plan-Image groups changed significantly on the Adjustment Scale.

6. The Plan group changed significantly on Total and Right Opinionation.

7. The Plan-Image group changed toward greater rigidity on the TBR Personality-Perceptual Rigidity Factor.

### *Conclusions*

Since the analysis of variance indicated a significant difference on only one of the 11 measures, no comprehensive conclusions may be drawn. The within-group changes, however, may suggest an interesting trend which deserves further investigation. The within group changes seem to suggest that:

1. the concepts of Plan and Image have some validity as they can be interfered with separately.

2. interference with Plans produces different changes than interference with the Image.

3. an increase in self acceptance is associated with better adjustment.

However, while the Plan group changes on more variables than the others, it cannot be assumed that this is necessarily a superior method.

### *Implications for further Study*

1. The differential changes by the Plan and Image groups on the Dogmatism and Opinionation Scales need further study. This investigation would seek to determine the degree to which the Opinionation Scale is a measure of Plans rather than beliefs.

2. Since the subjects of the experiment were drawn from a normal population, and were not seeking counseling, it might be

profitable to utilize the concepts of Image and Plans in a clinical setting.

While the hypothesis was not supported, a definite trend favorable to the notions of Image and Plans seemed to be established.

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- (4) Rokeach, Milton. *The Open and Closed Mind*. New York: Basic Books, Inc., 1960.
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## BOOK REVIEW

*Explaining 'Teaching Machines' and Programming*

by

David Cram, Fearon Publishers, San Francisco, 1961.

Price \$2.00, pp. 86.

This book considers in very elementary form two basic types of programming, taught to the reader as it would be in a programmed teaching machine. This book attempts to explain and contrast methods of organizing the students' learning experiences through the use of sequential steps involving directives, questions, and answers as would be required for a teaching machine lesson.

Essentially two types of programming are discussed—linear programming in which all students are required to follow the same sequence of steps until the lesson is finished, and branching programming in which each student may not follow the same path to the conclusion of the lesson but is permitted to make excursions into related areas for review or elaboration of the material being studied. Both constructed responses and multiple choice responses are considered by the author. Although some evidence suggests that the author wished to introduce psychological principles in support of each type of programming the result leaves much to be desired. One unfortunate and disturbing consequence of the book's organization is its reliance upon the principle of learning by doing. This disconcerting and often annoying approach is illustrated by the fact that what the author covers in thirty-four pages of programmed material is concisely explained in a one page summary. There is, however, an attempt to contrast both types of programming in terms of its effect upon learning and its relation to individual differences. Unfortunately no research data are used to substantiate the claims made.

If the reader's patience does not become overtaxed by the incessant necessity for flipping pages as directed by the author, the book will serve to introduce the topic in a most elementary form. Clear diagrams depicting the main methods of programming were found to be helpful. These alone can provide the beginning programmer with a basis for constructing initial programs for most teaching machines.

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## BOOK REVIEW

MacArthur, R. S. and Lindstedt, S. A., *The Alberta Teacher Force in 1957-58*, University of Alberta, The Advisory Committee on Educational Research, Monograph Number Three.

This monograph reports factually the major findings of a survey made to provide the Alberta Royal Commission on Education with information on the characteristics of the teaching force in the Alberta public schools as of May 1958.

A 55-item questionnaire was distributed to the 9,500 teachers and principals. Returns were received from 99.2 p.c. and the data were punched on I.B.M. cards.

The data are marshalled into four sections; (i) Vital Statistics, including sex, marital status, age, number of dependents, and salaries; (ii) Professional preparation; (iii) Experience and mobility; and (iv) Relation of academic background to subjects taught.

The monograph presents the results in tables usually showing percentages or medians as well as numbers, accompanied by short explanations where required and brief statements of the principal points to be drawn from the tables. These statements by no means exhaust the information to be derived from the tables.

The tables follow a common pattern (a) totals by sex, (b) sex and marital status, and (c) sex and types of administrative unit—divisions or counties, cities, other independent districts.

Except for data on age and number of dependents those of Section II are similar to those in the Dominion Bureau of Statistics annual publication "Salaries and Qualifications of Teachers in Public Elementary and Secondary Schools".

The distribution of men and women teachers by age show different patterns. Proportionately, there is a pronounced difference between the numbers of younger women and men and a drop in the proportion of men of military age during the war is quite noticeable.

In addition to classification by certificate, Section III provides significant information on professional preparation in terms of high school graduation and years of further education. A much larger proportion of men than women teachers have 4 or more years of post-secondary education. And it may surprise some to know that more than one Alberta teacher in 5 was first certificated in another province and that almost half of these came from Saskatchewan. Incidentally, an explanation that Grade 12 in Alberta is senior

matriculation level should have been given early in Section III for the sake of readers not familiar with this fact.

The data show marked similarity in experience for teachers working under the three types of administrative unit. What it does not show is that secondary teachers have 4.5 years more experience than elementary teachers and that the median is lower, (naturally) for the rapidly growing metropolitan areas and lowest for the larger rural schools.

Here, for the first time, is information on lapses or interruptions in service. As might be expected interruptions in service were very largely among the women teachers. Almost 37 p.c. of all teachers with two or more years of experience have had breaks in service, marriage or maternity accounting for over 54 p.c. of them, and furthering of education for another 15 p.c.

To this reviewer the discussion on turnover seemed confused. First, the term is used with two different meanings and second, one figure from outside the data collected is vital to the presentation—the total number of teachers for 1956-57. Given that figure, and using the generally accepted formula, turnover would have come out to less than 25 p.c. A second set of calculations could have shown clearly the number of teachers lost by Alberta between the two years, the increase in staff and the acquisitions. It would then have been apparent that the 1957-58 staff was over 10 p.c. (not 5 p.c.) greater than that of the previous year—a rate of increase that was held since the fall of 1947—and the estimate of requirements for 1958-59 would have been more realistic.

Section V relates the academic background of teachers of high school grades to subjects taught for English, Social Studies, Mathematics, Physical Science, Biological Science, Home Economics, Art, and Physical Education. Close to 45 p.c. of the teachers of French, of mathematics, and of physical science to the senior high school grades had no more than one related university course beyond what they may have been teaching.

The monograph concludes with a summary of characteristics of "typical" teachers, a copy of the questionnaire, and numbers and per cent frequencies for each item.

This is an interesting and valuable study, particularly the sections concerned with professional preparation and the relation of this to subjects taught. It would be even more valuable had it presented some comparative data on the teaching staffs of other provinces.

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### RECENT BOOKS

Bigge, M. L. and Hunt, M. P. *Psychological Foundations of Education*. Harper & Brothers: New York, 1962, pp. 530, \$7.50.

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# EDUCATION AND ASSIMILATION IN THREE ETHNIC GROUPS

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## The Problem

Within the ethos of the "great society" with its sweeping effort to educate every citizen, there are ethnic groups, or "little communities" (1) who are as much concerned about the maintenance of their way of life as is the great society. The educational effort of the ethnic group is to maintain a way of life in keeping with the belief system. Their efforts are often not only to maintain distinctive religious and cultural practices but to evade the pervasive educational values implicit in the great society. This "boundary maintenance" (2) activity, intended to preserve the social system and its traditional interaction patterns, takes many forms and generally increases with the threat of encroachment. The problem in this paper is to relate the value systems of three ethnic (3) groups with the value system of the great society, and to develop several hypotheses on the nature of ethnic extinction.

Since the three ethnic groups under consideration reside in three North American countries, it is essential that we take account of the educational objectives in these three countries: Canada, the United States, and Mexico. Objectives of education are very numerous and there is no absolute agreement on the objectives. Nevertheless, the general objectives appear to be as follows.

1. In Canada education is the primary responsibility of the provinces. In Alberta one source gives three general purposes of secondary education: "(a) the fullest realization of the youth's personal potentialities; (b) the preservation and improvement of the democratic social order; (c) the understanding, utilization and improvement of the physical environment." (4) The recent *Report of the Royal Commission on Education in Alberta* (5) lists 280 recommendations for the improvement of public supported education in the province.

2. Education is one of the most cherished values in the United States today. It is considered one of the most important institutions for the strengthening and propagation of American democracy. The

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"Report of the President's Commission on National Goals" presents the case: (6)

Education is important in any modern society, whatever its political or economic forms. But a society such as ours, dedicated to the worth of the individual, committed to the nurture of free, rational and responsible men and women, has special reason for valuing education. Our deepest convictions impel us to foster individual fulfillment. We wish each one to achieve the promise that is in him. We wish each one to be worthy of a free society, and capable of strengthening a free society.

Education is not only the desideratum of every person. It should also be made available and utilized by everyone. The report continues: (7)

Education is essential not only to individual fulfillment but to the vitality of our national life. The vigor of our free institutions depends upon educated men and women at every level of society. And at this moment in history, free institutions are on trial.

3. Mexican attitudes toward education are illustrated by slogans as "Land and Books," and "To Educate is to Redeem," and "To Educate is to Govern." (8) Article 3 of the Constitution of 1917 suggests that democracy shall be promoted by education. "It shall be national . . . without hostility or exclusivism. It shall contribute to better human cooperation, 'promote esteem for the dignity of the person' and produce an appreciation of 'the general interest of society.' At the same time, it shall avoid 'privileges of race, sects, groups, sexes and individuals'" (9)

Article 3 also points to the universal nature of education by stating: (10)

Education given by the Federation, States and Municipalities shall develop harmoniously all the faculties of the human being and encourage in him at the same time a love of country and a consciousness of international solidarity . . . It is to be national, paying attention to the nation's problems, the development of its resources, the defense of its political and economic development and the growth of an integrated national life.

A number of observations could be made about the way education is valued and propagated. Only a few relevant ones can be made. (1) It is assumed that everyone, regardless of his membership in religious or ethnic groups, desires to be educated. (2) It is assumed that when education is made available and dispensed, democracy prevails regardless of how it is dispensed or what the consequences are for the group. (3) That the "Canadian" or "Mexican" or the "American" way of life can and should become the goal of everyone.

### The Value Systems of Three Ethnic Groups

In contrast to the "imperialistic" nature of the educational institutions of the "great society" is the "defensive" nature of the ethnic religious group. These groups are intent upon preserving

their "otherworldly" orientation. They have no intention of becoming a part of the "great society". Three branches of the Anabaptist-Mennonite tradition will be described. They are the Old Order Amish, the Old Colony Mennonite, and the Hutterian Brethren or Hutterite. The basic beliefs are similar but the social organization and culture are very different. All believe and practice non-resistance and "nonconformity to the world." All utilize the German language but each has a dialect which is foreign to the other. All live geographically from each other. Each believes that they are "a chosen people" whom God will reward for maintaining their distinct faith.

1. The Old Order Amish (12) are a radically conservative offshoot of the Swiss Brethren from 1693 taking their name from Jacob Ammann, who stood for a strict interpretation of the doctrine of shunning excommunicated members. Like other Pennsylvania German groups they migrated to Pennsylvania in the eighteenth century and now number about 43,000 persons living in eighteen states and in the province of Ontario. They are distinctive in maintaining a ceremonial and ecological community known as the "church district" limited by horse-and-buggy travel. The Amish remain on the land and practice "nonconformity to the world" which includes taboos of electricity, telephones, and automobiles. Their grooming and dress has become highly symbolic of group identity. They are generally thrifty and hard-working owners of family farms, often living close to highly industrialized areas.

2. The Old Colony. The Old Colony Mennonite Church is an offshoot of the Dutch-Russian Mennonite heritage. (13) It separated from the mainline Mennonite group very slowly on the basis of cultural and practical differences. Culturally, the Old Colony became separated from the Mennonites in Russia through isolation and stagnation. The migrations to Canada from Russia served to isolate the Old Colony members geographically so the division was not long in coming. The migration to Mexico of the bulk of the Old Colony in 1922 because of the education issue serves as a convenient date for its existence as a separate ethnic group. Like the Amish, the Old Colony conforms to the school of folk society. (14) Its charter of faith teaches that the Old Colony is a people of God, called to be faithful and obedient to God through separation from the world and perpetuation of their way of life. The Old Colony is organized in villages, and is a theocracy, in the sense that the church, through the ministers and bishops, determines the pilgrimage in the world.

3. The Hutterites. The Hutterites (15) originated in Austria and Moravia in the sixteenth century, named after Jacob Hutter, who



was its leader and martyr in 1533. The Hutterites early in their history established the *Bruderhof* or colony idea, where all material goods are held in common under the direction of appointed leaders. The individual Hutterite owns nothing, not even the clothing on his back, though they are his to wear. He works, sleeps, worships, and lives entirely under the direction of the Christian community. The practice of "community of goods" has been maintained by this group from Austria, through Moravia, Slovakia, Hungary, Russia, and now in the United States and Canada. There are presently about 130 colonies and 12,500 people, over half of which are in Canada. The Hutterites make much of living in geographic isolation as well as symbolic isolation from the world. Private property is an obstacle to Christian community. The world is full of strife where everyone is for himself. The world is a *Jammertal*, a valley of tears, but meanwhile the colony becomes the "ark" of salvation as the Christian travels through it to the next world.

### The Plan of the Paper

The above characterization of the educational objectives of the host countries, and of the three ethnic groups will make it abundantly clear that tension, if not conflict, exists between the educational objectives of the "great society" and of the religious ethnic groups. This paper will attempt to indicate the nature of the conflict, and the type of possible strategies that can be used as the ethnic groups try to defend their way in life.

The problem of this paper is as follows: the host countries are all committed to a permeation of their way of life. This is to be accomplished most successfully by education and its benefits to all citizens.(16) The ethnic groups on the other hand are not interested in the democratic aims of education, because they are aware of the effects this will have on their own society and culture. What can the ethnic group do to retain its own identity in this situation?

This problem can be set forth in the form of a hypothesis which this paper will attempt to prove: The degree of assimilation is an index to the degree to which the ethnic group is dissolving. Since this has no predictive value, an intervening variable is proposed which will explain why some ethnic groups disappear faster than others. It is therefore proposed that the type of "control" of the educational offensive of the great society will best predict the dissolution of an ethnic group.

Section one of the paper will present a paradigm of the degree to which the three groups vary in their assimilation to the host society. Section two will document the degree to which the three



groups are resisting dissolution. Section three will present a description of the modes of control of the educational offensive of the "Great Society" which, it is hypothesized, will predict the ability of the group to maintain its own identity.

#### IV. The Degree of Assimilation in the Three Ethnic Groups

The variable that has been chosen to describe the difference in assimilation of the three groups is that of economic communality—that is to say, the degree to which the groups reject the capitalistic orientation present in the three countries. It is assumed that the degree to which the groups practice communal ownership and initiative serves as a valid measure of the rejection of a prevailing value system. Other criteria of assimilation could be used, but the writers feel confident that this one is empirically verifiable and most easily presented. In the following comparison, each group will be compared on two variables, the ownership of property, and the initiation of economic action.

##### A. *The Amish*

1. Ownership. The Amish church owns no land in common, as all lands are owned by family heads just as in the great society. Farms are purchased from outsiders as the population increase requires. Farms may be bought or sold to anyone at the discretion of the individual. Farm machinery, livestock, and all furniture is owned by each household. The only property held in common in an Amish church district are the songbooks, and in some districts, the benches which are transported from one home to the next. The Amish hold personal property in the same way as American citizens. But of course, sharing and mutual aid activities are also highly characteristic. An Amish farmer may sell his farm in one state and move to another. Preachers who have difficulty in getting along in one district are not prohibited from moving to other communities. The Amish system permits greater mobility than do the other two social systems.

2. Initiative. An Amish farmer has considerable freedom in the economic aspect of life, so long as he confines his interest to farming and related occupations. The young Amishman must begin the climb on the "agricultural ladder" as a farm hand. He typically opens a savings account in the bank, and the initiative to full ownership depends on his own ability. He may borrow from his relatives, from the bank, or from the government. The decision is his. The church district has no direct control over his economic decisions so long as he conforms to the general *Regel und Ordnung* (rules and order) of the district. He could, of course, not buy an auto-

mobile but in making investments within the areas approved, the initiative is personal.

### *B. The Old Colony*

1. Ownership. The Old Colony church officially holds title to all land purchased in Mexico or elsewhere. It is then "sold" to individual members who pay the church a designated sum of money. The land cannot "officially" be sold without the church's permission though the land does change hands, though limited to members. No one would be free to sell land to an outsider. The church buildings and lands, and the school facilities are owned by the Old Colony as a group. There are many other goods which are privately owned, such as farm buildings, horses and buggies, etc.

2. Initiative. Individual initiative is limited by religious and social control. A farmer is free to start a new business, like a feed mill, but only if it does not undermine the Old Colony religious beliefs or social system. For example, an Old Colony member could not set up a store in a Mexican village. If he were to set up a partnership with a Mexican, he would be admonished by the leaders of the church and excommunicated if he did not capitulate. An Old Colony farmer may become wealthy, but this is carefully watched by the church.

When the Old Colony communal system is compared with the Amish and Hutterites, it is clear that it is in the middle, and has rejected more of the capitalistic values than the Amish, but not nearly as many as the Hutterites.

### *C. The Hutterites*

#### 1. Ownership.

The Amishman is a private enterpriser, the Old Colony a limited enterpriser, while the individual Hutterite is no enterpriser at all. Here land may not be owned by the individual under any circumstances. Ownership by the individual would be a violation of the basic charter. Land is owned by the corporation, the local group of Hutterites. Land is bought and sold only as voted by the baptized males. Ownership of farm equipment, and the purchase of dry goods, or goods from the outside, requires the consent of the assembly. Checks and legal papers are signed by the preacher and the steward of the colony but the ownership is corporate.

2. Initiative. A Hutterite person has few decisions to make with regard to property while initiative is completely institutionalized. As stated, he may own nothing of his own and initiative in this direction would not be tolerated. His needs for maintenance are supplied. Initiative takes the form of conformity to norms. If



initiative must be taken it is up to the preacher and the steward to bring suggested courses of action to the entire body.

### The Degree of Dissolution of the Three Ethnic Groups

We have stated earlier that the degree of assimilation is an index of the degree to which the group is dissolving. Dissolution then becomes the dependent variable in our analysis depending upon the intervening variable (the position on education) discussed later. To establish a relationship between the independent variable (assimilation) and the dependent variable (dissolution) it will be necessary to examine the extent of dissolution in the three ethnic groups. We have chosen to examine dissolution in terms of: (1) the extent of member defection, (2) the facilities for deviancy control, and (3) how authority is challenged if at all.

#### A. *The Amish*

1. Defection. It is a well established fact that the Amish lose many of their members to the Mennonite churches. One study revealed that a third of the offspring in one district did not choose the church of their parents.<sup>(17)</sup> Amish farmers who wish to farm with tractors or drive automobiles instead of horses on the road, generally choose an Amish-Mennonite affiliation. There is a constant mobility from the orthodox to the more liberal groups of Mennonites. Defection has become institutionalized. Individuals, whole families, and entire congregations may become assimilated.

2. Deviancy Control. A baptized member who leaves the strict Amish church is liable for excommunication and for shunning for the rest of his life. But a young Amish man who has not been baptized cannot be sanctioned by the church. The only sanction which can be brought against him for having an automobile, for instance, is the attitude of his parents. Some parents will not sanction their sons for having a driver's license or even an automobile. If he wants to join the Amish church later, he will sell the automobile before he settles down to married life.

3. Challenge to Authority. Authority is not directly challenged in the Amish society, but a great deal of "backtalk" and gossip nevertheless can and does take place. A deviant in any of the three groups has little chance of influencing the leaders directly, and in Amish society a challenge to authority comes about when subgroupings develop and threaten the existing structure. Change of the *Ordnung* can come about if there are enough offenders, or as often happens, a cleavage forms between two groups who choose their separate ministers.



### *B. The Old Colony*

1. Defection. Defection in the Old Colony is very low. Only about five people had defected from the Old Colony and become Mexican. Most of these defected through marriage with Mexican people. There were several others who because of moral degeneracy had left the Old Colony, but they had ended up in jail or became castaways. This state of affairs existed when Redekop was doing research in the Old Colony. Certainly before that time there were some who had defected and some may have left since. But nevertheless, by increasing the number that defected each year to twenty or so (which is much too high) the annual rate of loss is still .0015 which is fantastically low. (The total population of Old Colony in Mexico is approximately 13,000 souls.)

2. Deviancy control. Deviancy is controlled through various mechanisms from social pressure of public opinion to church discipline based on religious mores ending in excommunication and shunning. Excommunication is still practiced, though shunning of the excommunicated is less effective than it was twenty years ago. Church members are controlled by church regulations. Non-church members are controlled by parents who are members, or by secular means, such as village fathers. If a member should decide to buy a car instead of the regulation buggy, he would be brought before the "Donnerstag"—Day of Thunder—a meeting of the deacons and preachers. If he still would not recant, he would be brought before the church and excommunicated.

3. Challenge of Authority. Authority is not directly challenged. If a member deviates, it is not often because he rejects the Old Colony system or because he rejects the authority of the church. It is rather most often caused by personal needs. For example, one member bought a truck and was told to sell it or be excommunicated. He did not sell the truck because he had bought a piece of land some distance away and needed it to get back and forth. He was accepted as soon as he had finished his hauling. The challenge to authority, such as exists, is informal and crops up at those places where the individual feels his personal welfare is at stake. He does not flaunt the authority of the Old Colony way of life.

### *C. The Hutterites*

1. Defection. The loss of members in Hutterite society is again very low. Colony leaders admit that single boys leave the colony during the summer, but usually return again in the fall. Of those who attempt to leave permanently, many return after they have "tried the world." The transition from communal life to individualism appears to be unnatural for them. Intensive moral doctrination

from kindergarten through adolescence helps to offset attractions in the world. Joseph Eaton and his associates reported that 106 Hutterite males and eight females had deserted at the time of his mental health study in 1951. He reported 144 additional cases of individuals who had "tried the world" but returned. Permanent defectors are believed to be no more than 2.5 per cent of the population aged 15 and over. (18) The deserters are invariably individuals and never families or sub-groups within the colony.

2. Control of deviancy. The social controls are multiple, and the sanctions for misconduct are very severe. Offenses of children are punished by whippings and deprivations. Minor offenses of members are punished by admission of guilt and confession before the *Gemein*, and major offenses such as drunkenness, adultery, or deserting the colony invoke excommunication and the ban. Under these circumstances the *Bundbrecher* (vow-breaker) is not asked to leave the colony but he is assigned to his apartment where he must eat, sleep, and remain in isolation from others until he repents his misdeeds. Kaplan and Plaut suggest that "the motivations which are built into the individual (Hutterite) during socialization insure that he 'will want to do what he has to do.'" (19)

3. Challenge to Authority. The individual Hutterite may not question the decision of the community. Respect for order and authority in colony life are rated very highly, and individuals who would challenge the existing structure would be displeasing the divine order. Hutterites have much to say in praise of their colony, and while one colony may rate others very low, the writers have never found an instance where members criticize their colony leaders. The willingness to accept orders without question appears to be more marked among the Hutterites than either among the Old Colony or the Amish.

### **The Relative Control of the Educational Process**

The above analysis strongly suggests that the degree of assimilation correlates very closely with the degree of defection from the group. There is a great deal of literature which documents the persistence or dissolution of ethnic groups. However there is little theoretical material which proposes to predict why groups dissolve. The intervening variable in our comparison, that is, the educational strategy of the three groups, offers some insight. The strategy of each group will be compared on the basis of its physical and psychological proximity to the Great Society's educational offensive. We shall also compare the facilities for the control of curriculum and the ideological content.



### *A. The Amish*

#### *1. Proximity.*

i. Physically. The school building where the Amish children attend is typically a one-room school in the country. They attend one-room public schools but also private schools of their own where one-room schools have been closed. The distance to school is essentially the same. The Amish live within walking distance as a rule. In the Amish group, the building is least integrated with the social life of the group.

ii. Psychologically. While the school experience is a normal part of life, it remains a part of the domain of the outside world. The school as a social system is left outside of the integrating and functioning in-group. Compromises are made as necessary. The teacher in the case of a public school is not a part of the Amish community and represents the outside world. In the case of a private school, the teacher is either a sympathetic outsider or an Amish person. In any case the role of the school is considered marginal to the life of the Amish community.

#### *2. Control of teaching.*

i. Curriculum. The Amish people have no control over the curriculum. In some states the parents must buy the books for their children every year. In others, the school division provides the books. In any case neither the parents nor the church have any control over the subjects taught. Public school teachers are appointed by the school district.

ii. Ideologically the Amish have no control over the philosophy of education. The school experience is accepted as a kind of necessary evil. Efforts are maintained to keep methods and ideology from changing. The Amish attitude toward schooling may be characterized as defensive. Education beyond the elementary grades is not approved, and parents will go to prison if necessary to defend this point. An Amish youth who insists on going to high school or college becomes a deviant, because the high school is viewed as a "machine" that prepares one for living in the "world", not in the Amish community.

### *B The Old Colony*

#### *1. Proximity.*

i. Physically. The Old Colony educational system is in close relationship to the total life of the Old Colony. The school building is situated in the center of each village. The teacher lives on the school grounds in a house provided by the village. Many of the village and church functions (such as a tax collection) take place in the school.



ii. Psychologically. The educational system is conducted by the Old Colony people themselves so that there is a close feeling for it. The schoolteacher is "one of the people" and is a respected member of the church. There is rarely any tension between the school teacher and the villagers.

## 2. Control of teaching.

i. Curriculum. The Old Colony is in complete control of the school system in Mexico and determines the subject matter, length of the school year and other matters. A six year curriculum is considered adequate for everyone and no one has ever gotten more. A graduate of the school can immediately be hired to teach others.

ii. Ideologically the Old Colony in Mexico is in complete control of the philosophy of education. It determines what the purposes of education shall be, what types of educational practices shall be used, what the curriculum will be, who shall teach and many other things. (How long this will be the case depends upon what the Mexican government will do in the near future.)

When the Old Colony is compared with the Amish and the Hutterites, it is apparent that the Old Colony educational strategy is again between that of the Amish and the Hutterites. In view of the educational strategy of the great society it might be termed a strategy of evasion, for the Old Colony until now has taken a course of migration whenever the great society's educational offensive became too pressing.

## C. Hutterites.

### 1. Proximity.

i. The Hutterites school building is prominent in every *Brudershof*. This close proximity allows the leaders to know what goes on in the school. The teacher is an outsider appointed by the school division but in many cases lives in the colony teacherage. In Alberta each colony negotiates an agreement with the School Division to provide the building, equipment, toilets, heating, lighting and janitor service. At the same time, the colony is free to use the building for its worship services which are held every evening as well as several times on Sunday.

ii. Psychologically. The Hutterites have a deliberate and well formalized program of education. Children are invariably in a group of their own age. The Hutterite child is in kindergarten daily from age two through five and here he learns to recite, sing, write, and think like a Hutterite. After he enters the English school on the colony he is already well fortified against a foreign culture. During his elementary training, he also attends the German colony school in

the morning before English school begins and in the evening after English school is over. Instead of sending their children away to the English school, as do the Amish, the Hutterites bring the English school into their environs and attempt to control the learning situation.

## 2. Control.

i. Curriculum. Hutterites have the option of buying or renting the school texts from the school division. Though they have no direct control over the curriculum, the physical proximity of the school to the colony permits leaders to have a strong degree of informal control over the teacher and the learning situation. The colony leaders, for instance, prohibit the use of a radio, projected film, or record player in the school room. Since the building has a dual function, educational materials and art work drawn by the children have no place in the church house. Consequently they must be put away at the end of the day. Many teachers do not wish to accept a position with these limited possibilities, and it is a fact that the better and most capable teachers are not attracted to Hutterite colonies.

ii. Ideologically. The Hutterites accept the benefits of the public school system. Leaders declare they want their young to learn enough about arithmetic and the English language to become leaders of the future. While the English school is brought into the colony, its influence is carefully guarded in a controlled environment. We have characterized the Amish attitude toward education as defensive, the Old Colony's as evasive, but the Hutterite attitude appears to be offensive.

## Conclusions

We have characterized the three ethnic groups in terms of assimilation and dissolution. We examined the extent of assimilation in terms of the economic community, that is, the degree of rejection of the capitalist orientation. The extent of dissolution was examined in terms of the defection of members, the controls over the deviant, and the way in which authority may be challenged. In order to account for the close association of assimilation with dissolution we proposed that the educational strategy of the three groups explains the differences. The variables we have examined were physical and psychological proximity, and curriculum and ideological control.

The Amish group is most assimilated in terms of losing its members. It makes little use of education, and seeks to keep it at a distance. Its adjustment to public education is characterized by a "defensive" attitude. The Old Colony Mennonite which has com-



plete control over its schools, loses few members, but really has no interest in developing an educational strategy beyond the level of the folk mentality. The attitude toward the public school is one of complete evasion. The Hutterite group is least assimilated and is one group which brings the public school into the community but modifies its influence to the fullest advantage of the group culture.

The evidence presented from the three ethnic groups points to the verification of the hypothesis that a group will resist dissolution to the degree that it can "control" the educational offensive of the great society and exploit it to its own advantages. It seems apparent that "control" refers to the ability to accept the "inexorable" advance of the educational process of the "great society" and exploiting it to serve the causes of the ethnic group's basic objectives.

The Amish accept the inevitability of the educational offensive, but did not discover a means to control it for their own advantage. The parochial system was not sufficient because (a) they could not control it since they had no educational knowledge, (b) they were psychologically unfavorably disposed to exploiting it. Minimal adaptation to the educational offensive was the defensive tack chosen by the Amish.

The Old Colony has rejected the inevitability of the educational offensive of the great society. It has accepted the importance of education, but only its own kind. The Old Colony has not yet adapted itself to the progress in the educational advance, and has chosen the strategy of evasion. It will probably not be able to survive when it is forced to participate in the great society's educational program. Migration is a short range solution, but in the long run will only serve to keep them disarmed for the ultimate confrontation with education. (One group of Old Colony in northern Alberta is now pulling up stakes after developing a virgin area and is moving to new areas in British Columbia in hopes of escaping the provincial educational offensive.)

The Hutterites have accepted the inevitability of education on the great society's terms, but have made it innocuous by "neutralizing" it. That is, they have integrated the educational process into their system psychologically as well as physically and ideologically, so that the educational offensive is theirs. The fact that the school house is also the religious meetinghouse, the way in which the Hutterites ingratiate themselves with the teacher in supplying him with the necessities of life, serves to "tame" the pagan influences to a remarkable degree.

On the assumption that all other factors remain as they are, it is therefore predicted that the three ethnic groups will meet their



demise in the order of presentation. The Amish will lose their identity first, then the Old Colony, and the Hutterites could go on indefinitely.

### Generalization

A generalization from the foregoing conclusions may be permitted. In spite of much emphasis to the contrary, the United States and Canada still have many groups that are striving to retain their character and not capitulate to the prevailing society. Many religious groups, especially the more sectarian groups, are concerned about maintaining their boundaries. Thus the Missouri Synod Lutheran Church or the Mormon Church or any other such group is concerned about retaining its character. It is proposed that one of the variables that will best predict the survival of a dissenting group is the ability to control the educational process.

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1. By "great society" we mean the values of the larger civilization as it impinges on "the little community," in the sense in which Robert Redfield uses these terms. See *The Little Community* and *Peasant Society and Culture* (University of Chicago Press, 1960) and *A Village That Chose Progress* (1950).
2. Charles P. Loomis, *Social Systems* (Van Nostrand, 1960), 31.
3. By ethnic group we mean that definition given by Everett C. Hughes: "An ethnic group is not one because of the degree of measurable or observable differences from other groups; it is an ethnic group, on the contrary, because the people in it and the people out of it know that it is one; because both the ins and the outs talk, feel and act as if it were a separate group." E. C. Hughes, *Where People Meet*, Glencoe, Free Press, 1952, p. 156. This is in keeping with Max Weber's concept of ethnic solidarity, *ethnische Verwandtschaftsgefuehle*, the community of ethnic feeling, and *sinnhafte Verstaendlichkeit*, or the understanding of the behavior of others as a fundamental presupposition of communal relationship. (Max Weber, in *Theories of Society* Edited by Talcott Parsons, et al., (The Free Press of Glencoe, Inc., 1961), 307.
4. From *Curriculum Guide for Alberta Secondary Schools* (Province of Alberta, Department of Education, January 1, 1950), 7.
5. Otherwise known as "The Cameron Report". A condensation was published by the Alberta Teacher's Association (1960).
6. *Goals for Americans*. Report of the President's Commission on National Goals, Englewood Cliffs, Spectrum (Prentice Hall, 1960), 81.
7. *Ibid.*, 81.
8. William P. Tucker, *The Mexican Government Today* (University of Minnesota Press, 1957), p. 350.
9. *Ibid.*, 353.
10. Marjorie C. Johnstone, *Education in Mexico* (Washington, U.S. Department of Health, Education and Welfare, 1956), 25-26.
11. Cf. Charles S. Johnson, *Education and the Cultural Crisis* (Macmillan, 1951), Chp. 5.
12. Calvin G. Bachman, *The Old Order Amish of Lancaster County, Pennsylvania* (Pennsylvania German Society, 1961) is an ethnography of a single community.

13. Calvin Redekop, *The Sectarian Black and White World* (Ph.D. dissertation University of Chicago, 1959).
14. Robert Redfield, "The Folk Society," *American Journal of Sociology* (January 1947), 293-308.
15. Joseph Eaton, "Controlled Acculturation," *American Sociological Review* (June 1952), 331-340.
16. Johnson, *op. cit.*, 86-87.
17. J. A. Hostetler, *The Amish Family in Mifflin County, Pennsylvania* (M.A. Thesis, The Pennsylvania State University, 1951), 210.
18. Joseph Eaton and Robert Weil, *Culture and Mental Disorders* (Free Press, 1955), 41.
19. Bert Kaplan and Thomas F. A. Plaut, *Personality in a Communal Society* (University of Kansas Publications, 1956), 104.

# THE PARENTAL IDENTIFICATIONS OF ADOLESCENTS

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## Introduction

This study was designed to investigate the sex-role and parental identifications of junior and senior high school students by comparing their self-perceptions with their perceptions of parents.\* It is assumed (1) that the degree of parental identification varies with the extent to which the subject attributes characteristics to his parent which he also attributes to himself, and (2) that similarity to the like-sex parent, particularly in the instances of the variables tested, constitutes a basis for the measure of sex-role identification.

McCandless presents one of the best descriptions of the variable under study:

The boy who has made a male identification is the boy who has happily and thoroughly adopted maleness as his way of life; he thinks of himself as a male; he adopts and likes this state of affairs, its advantages and disadvantages; and he assumes the responsibilities that being male demands. His fantasy behavior is male, just as his sexual behavior, pattern of interests, and style of walking, talking, and gesturing are male. It is assumed that the boy has learned to be male for various social-personal reasons and that ordinarily (and ideally) his best model for this role is his father. In other words, it is likely that a boy must be identified with (for instance, love, respect and in many ways imitate) his father to arrive at a consistently and genuinely male identification.<sup>1</sup> (1961, p. 338.

Research into the functioning of the identification process has led to considerable apparent disagreement (Stokes, 1950; Sanford, 1955; Kagan, 1958); however, Merlyne's (1960) theoretical model of motivation permits a clearer explanation of the process. He asserts that all behavior is designed to reduce arousal, immediately, or after a period of time, to an hypothetical optimum level. Both psychological and cognitive (intellectual) needs can be reduced to the same homeostatic model which represents all behavior as functioning to reduce supra-normal arousal in either an immediate or a delayed fashion. Identification subserves the same function and can be explained as occurring either to reduce the arousal existing as a result of non-conformity or to prevent that which is apt to occur in the absence of conformity.

The process is influenced by two sets of factors: firstly, those that

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\*The author is indebted to Dr. C. C. Anderson, under whose supervision the study was conducted.

<sup>1</sup>Feminine sex-role identification would be explained in a similar fashion substituting the mother as role-model.



promote arousal and make arousal reduction imperative; and secondly, those that promote the required arousal reduction. The latter group in the present instance includes:

1. The clarity of the model role, identification being facilitated by the subject's having a clear perception of the model;
2. The ability of the subject to assume the model role;
3. The degree of affection and acquaintance between subject and model;
4. The type of existent family relationships.

Most studies of parental and sex-role identification report a tendency for boys to identify strongly with the like-sex parent and the masculine role. (Emmerich, 1959; Rabban, 1950; Fauls and Smith, 1957; Brown, 1957; Hantup and Zook, 1960). Girls, by contrast, do not, according to these studies, reveal a corresponding and constant allegiance to the feminine role. Up to approximately age ten they continue to state preferences and make choices which would indicate incongruous desires to share in the masculine role. This may be explained most plausibly by postulating that, for the boy, social as well as parental pressures and reinforcements to assume the masculine role are greater than corresponding directives for the girl towards the feminine role; consequently, there is increased opposite sex-role preference and identification among girls. (Lynn, 1956; Brown, 1958).

### **Sample, Hypotheses, Instrument and Procedure**

The following hypotheses related to sex-role and parental identification were tested by analyzing the responses of a sample of three grade seven and two grade ten classes in Wainwright, Alberta, schools, two age groups being used in order that development trends might be noted:

- I. There is a positive relationship between the degree of masculinity in a male subject and that perceived to exist in the father.
- II. There is a parallel but lesser relationship existing between the degree of femininity in a female subject and that perceived to exist in the mother.
- III. There is significantly more father identification among girls than mother identification among boys.
- IV. The degree of both mother and father identification decreases with age.
- V. There is a greater degree of father identification among Grade VII girls than among Grade X girls. (This hypothesis is logically implied in the previous one but the trend was expected to be more marked).

The procedure followed was similar to that of Beier and Ratzburg (1953). Five scales from the California Psychological Inventory, masculinity-femininity, flexibility, dominance, achievement via independence, and self-acceptance were administered three times within a period of a week and a half. The subjects answered the questions first in relation to their own viewpoints, secondly as they would expect their mothers to answer them, and thirdly as they might expect their fathers to answer them. By comparing the results of these three administrations it was possible to obtain, among others, a mother and a father identification score by means of which the previously stated hypotheses could be tested.

### Findings and Discussion

The accompanying findings are based on correlations calculated among all variables.

**HYPOTHESIS I.** That there is a positive relationship between the degree of masculinity in a subject and that perceived to exist in the father, is supported for only one of the two groups, the grade seven one. The grade ten group registered a significantly higher masculinity score than the grade seven group but they identify with fathers on only two of five scales, dominance and self-acceptance. These variables are typical of the culturally accepted stereotype of the masculine role, aggressive, demanding, confident, persistent, planful, self-assured, self-centered and outspoken.

**HYPOTHESIS II.** That the degree of femininity of female subjects is positively related to that perceived in mothers was not validated. Lynn's hypothesis, that males identify with the cultural stereotype, whereas females tend to identify specifically with respect of their own mothers' role, was not supported.

**HYPOTHESIS III.** That there is significantly more father identification among girls than mother identification among boys is verified for the grade ten group but not validated for the grade seven groups. The positive findings support the consensus regarding frequency of opposite sex-role identification among girls due to the more attractive nature of the masculine as contrasted with the feminine role. Contrary to the hypothesis, the degree of mother identification was higher, though not significantly so, than for father identification in grade seven boys. This might be partially attributed to the immaturity of grade seven boys as contrasted with grade seven girls and the subsequent continued attachment to the mother.

**HYPOTHESIS IV.** That the degrees of both mother and father



identification decrease with age was validated for boys although not for girls. In the case of the latter, as indicated in the discussion of the previous hypothesis, father identification is no greater at the grade ten than at the grade seven level. Mother identification, however, does decrease during the period from grade seven to ten. This might be partially the result of the fact that the members of the grade ten sample are girls who are slightly beyond the age of compulsory school attendance and perhaps somewhat like the career-type of individual described by Komarovsky (1946) as manifesting similar aspirations to those of the opposite sex.

**HYPOTHESIS V.** That there is a significantly greater degree of father identification among grade seven girls than among grade ten girls was rejected. However, an interesting pattern of father-daughter similarities was revealed. In connection with the second hypothesis it became apparent that, of the traits measured, similarity between mothers and grade ten daughters was confined to those which were rather authoritarian by nature. Similarly, these subjects resemble their fathers in these and only these areas (dominance and achievement via independence), which suggests that perhaps the qualities themselves are attractive and sought out regardless of the sex of the model manifesting them. This could be cited as evidence of opposite sex-role identification and an attempt to gain command of the envied goal-states of the opposite sex through identifying with masculine characteristics in either parental model. Simone de Beauvoir (1961, p. 38) comments on the fostering of a belief in masculine superiority through the elevated status of the father in the family, the universal predominance of males and the type of education advocated for girls. She further theorises that the characteristic attitude of males, who lack confidence in women, encourage the development of the aggressive attitude characteristic of some women who resent it. (ibid. p. 675).

### **An Explanation in Berlyne's Terms**

A summary of findings plus a brief explanation of each in Berlyne's terms follows:

1. (a) There is a significant positive correlation between the masculinity scores of grade seven boys and the masculinity scores they attribute to their fathers.
- (b) The grade ten boys have higher masculinity scores but no significant correlation between these scores and those they attribute to their fathers is demonstrated.



The grade seven boy is commencing a period of socialization in which the peer-group will have increasing importance. Up to this time his father has been his chief masculine model. To fail to conform has invited criticism and/or threats from his father, this in turn inducing supra-normal anxiety, whereas meeting his standards is approved and rewarded.

The higher masculinity scores of the grade ten group reflect an increasing awareness of the necessity of conforming to the pattern of behavior popularly associated with masculinity. The lack of similarity between self-scores and scores attributed to fathers, who were earlier chief models, is perhaps a product of the changing customs of this society. Fathers and sons might well differ with respect to important issues such as spending money or standards relating to sexual behavior. Also the grade ten youth has access to many models especially in the peer-group, which to a large extent dictates his behavior, some of which are more appealing than that provided by the father.

2. Significant relationships between the femininity scores of both grade seven and grade ten girls and those attributed to their mothers are lacking.

In early childhood and constantly thereafter boys are encouraged to assume the masculine role and admonished for being in any way feminine. Girls, by contrast are not reciprocally treated. Boys' names, clothing similar to that worn by boys and "tomboyish" behavior, are condoned (Lynn 1956, Brown 1958). Their mother-model thus may not assume such importance for the girl as the father model does for the boy, since there are fewer demands for and direction towards assuming the feminine role. Secondly as girls, both in junior and senior high school, continue to pursue academic success, the home-maker model proffered by mothers, especially in rural areas, becomes increasingly less desirable both socially and personally. Thirdly, girls compete, strive for success, and excel in the same subject areas as boys and frequently enter the same professions. For all of these reasons they become less likely to identify with the mother model.

3. A higher father identification score among girls than mother identification score among boys is found in the grade ten sample although not in the grade seven group.

This finding can be partially understood in terms of the sparsity of directives toward the feminine role as previously explained. Also, it seems probably that youth identify with traits which will facilitate their existence in today's competitive

society, regardless of the sex of the model manifesting these traits. Any behavioral characteristics represented to the offspring as desirable, that is to say tension-reducing in contemporary society, will be absorbed regardless of the sex of its possessor.

The average mother-identification score for the boys of the grade seven sample is just as great as the average father identification score for girls of this age. This is apt to be the result of the later development of boys as contrasted with girls.

The grade seven boy in many instances is more a child, whereas the girl at the same age is likely to be socially more mature and a 'typical teen-ager.'

4. The average parental identification scores are significantly less at the grade ten level than at the grade seven level with one exception; the average father identification score for girls is as great for grade tens as for grade sevens.

In explanation of this finding one might again note the greater tendency of the 'career-type (Komarovsky, 1946) of individual to identify with masculine traits, and the increasing effect of the peer-group which tends to have rather more masculine characteristics. Fathers seem to provide a more adequate model of the things after which these girls strive than do most mothers in rural areas.

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# PARENTAL BEHAVIOR AND STUDENT ATTITUDES TOWARDS HIGH SCHOOL GRADUATION AMONG INDIAN AND NON-INDIAN STUDENTS IN OREGON AND ALBERTA

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This paper explores the relationship between parental behavior and students attitudes towards graduation from high school. The data here reported are part of a more comprehensive survey of attitudes undertaken among Oregon and Alberta high school students during the past two years. Involved in the survey were both Indian and non-Indian students attending an integrated high school in Central Oregon, the identity of which must for the present remain anonymous. Alberta students involved included both Indian and non-Indian students attending the partially integrated high school at Cardston, Alberta, as well as Indian students attending a number of denominational residential schools in the Blood and Blackfoot reservations in Southern Alberta. With minor exceptions which are noted in context below, the survey in all instances sought identical data so as to permit comparisons of Indians and non-Indians as well as Albertan and Oregonian student populations as a whole.

## **The Several Populations**

The data were obtained from populations consisting of 52 Oregon Indians, 304 Oregon Whites, 115 Alberta Indians, and 335 Alberta Whites. There totals represent the usable returns obtained from a questionnaire which was circulated in the classroom among the high school populations in each of the several schools involved. In no case was the response rate below 80 per cent.

In terms of basic composition the four populations showed considerable difference in respect to sex, age, class standing, rural-urban residence and father's education.

Differences in sex composition were minimal, with males predominating slightly over females in all instances except the Oregon Indian population in which the proportion of the sexes was approximately six to four in favor of the females. With respect to age, both the Oregon and the Alberta Indian populations showed considerably higher averages than either of the two non-Indian populations. In terms of class standing, both Indian populations tended to bulk larger in grades IX and X, with markedly smaller numbers in

grades XI and XII, as compared with a much more uniform distribution over the four grades among non-Indian populations.

In regard to rural-urban differences in residence, the respective proportions residing on farms were approximately equal with the exception of the Alberta Indian population in which the relative proportion was twice as large as among the remaining three populations. Further, only a small proportion of both Indian populations lived in either a town or a city, as compared with more than half of the students in both non-Indian populations. Respecting father's educational achievement there were again marked differences. The two Indian populations had a much larger proportion of students whose fathers completed only elementary school or less than did the two non-Indian populations. Also, more Indian students gave a "don't know" response on the question pertaining to father's education than did non-Indians.

### **The Hypotheses**

Three related hypotheses governed the specification and collection of data among the four populations. These were: (1) that parental behavior which is positive and supportive will influence student attitudes in a parallel direction; (2) that Indian and non-Indian students differ in their own and perceived parental attitudes towards graduation from high school; and (3) that the Alberta populations differ from the two Oregon populations *pari passu* respecting these same issues owing to cultural differences

### **The Criterion Variables**

The criterion variables, *i.e.*, the behavioral responses one seeks to predict, consist of two questions, one of which elicits information about the student's personal attitudes towards graduation from high school and the other about attitudes of parents as perceived by the student himself. The specific wording of these questions is given below in another context.

### **The Predictor Variables**

The predictor variables, *i.e.*, the items of information on the basis of which one would make prediction about behavioral responses to the questions comprising the criterion variables discussed above, are three in number. In addition to the two given variables of ethnicity and nationality, a third item is employed in the analysis as a predictor variable. This consists of a factual report on parental behavior as perceived by the students. Specifically, the wording of this question was: "How much pressure do your parents or guard-



ians put on you to think about going on to further training?" with response categories including "a great deal", "some", "very little", and "none at all".<sup>1</sup> Although other items similar to this one were included in the questionnaire and show a high degree of inter-correlation with it, the one employed here may be regarded as constituting a basic parameter of parental behavior which can be expected to determine in considerable measure the nature of the students' attitudes towards the issue represented by the criterion variables cited above.

The distribution of responses made by students to this question showed that both Oregon and Alberta Indian populations had a higher proportion of students reporting "a great deal" of parental pressure to think about going on to further training than did either the Oregon or the Alberta non-Indian population (see Table 1). The percentages were 40 per cent among Oregon Indians, 52 per cent among Alberta Indians, 26 per cent among Oregon Whites and 36 per cent among Alberta Whites.

TABLE I

DISTRIBUTION OF RESPONSES TO THE QUESTION: "HOW MUCH PRESSURE DO YOUR PARENTS OR GUARDIANS PUT ON YOU TO THINK ABOUT GOING ON TO (COLLEGE) FURTHER TRAINING?"

Response Categories	O.I. N=52 %	O.W. N=304 %	A.I. N=115 %	A.W. N=335 %
A great deal .....	40.00	26.97	52.17	36.12
Some .....	29.00	41.45	33.04	44.78
Very little .....	23.00	17.76	13.91	14.63
None at all .....	8.00	13.82	0.89	4.18
No answer .....				0.30

O.I. = Oregon Indians

O.W. = Oregon Whites

A.I. = Alberta Indians

A.W. = Alberta Whites

In order to facilitate measurement of differences between populations the responses to this question were dichotomized at the point where those students who checked the response category "a great deal" could be treated as one sub-population while students who checked some other response category could be collectively dealt with as another. This procedure made possible measurement of differences between students whose parents behave most sup-

<sup>1</sup>In the case of the Oregon populations the word "college" was used in the question in place of the phrase "further training".



portively and those whose parents are less supportive. Similarly, it made possible the measurement of differences on the basis of ethnicity and nationality.

Attitudes Toward Graduation From High School

The questioned designed to elicit the student’s personal attitude towards graduation from high school was phrased: “How disappointed in yourself would you be if you didn’t graduate from high school?”, with response categories “very disappointed”, “somewhat dissappointed”, “it would bother me very little”, and “it wouldn’t bother me at all.” The distribution of responses (see Table 2)

TABLE II  
DISTRIBUTION OF RESPONSES TO THE QUESTION: “HOW DISAPPOINTED IN YOURSELF WOULD YOU BE IF YOU DIDN’T GRADUATE FROM HIGH SCHOOL?”

Response Categories	O.I. N=52 %	O.W. N=304 %	A.I. N=115 %	A.W. N=335 %
Very disappointed ...	83.00	93.42	73.91	83.28
Somewhat disap- pointed .....	15.00	5.26	18.26	11.94
It would bother me very little .....	2.00	1.32	6.96	1.79
It wouldn't bother me at all .....				2.39
No answer .....			0.87	0.60

O.I. = Oregon Indians

O.W. = Oregon Whites

A.I. = Alberta Indians

A.W. = Alberta Whites

shows that the differences ranged from 74 per cent among Alberta Indians to 93 per cent among Oregon Whites in the “very disappointed” category. The proportions among Oregon Indians and Alberta Whites were approximately 83 percent in either instance. The remaining students in each population checked response categories indicating lesser degrees of disappointment.<sup>2</sup>

Cross-tabulatoin of responses to this question with those on the predictor variable item relating to parental pressure to think about going on to further training showed the influence of parental behavior is in the expected direction (see Table 3). Students whose parents put on “a great deal” of pressure to think about going on to further training were uniformly more inclined to report themselves “very disappointed” at the prospect of failure to graduate from high school than were others. The difference in percentage points,

<sup>2</sup>This latter category of students is referred to as the “less disappointed” in Table 3..

TABLE III

COMPARISON OF STUDENTS WHOSE PARENTS PUT ON "A GREAT DEAL" OF PRESSURE TO THINK ABOUT GOING ON TO (COLLEGE) FURTHER TRAINING AND OTHERS ON REPOSSES TO THE QUESTION: "HOW DISAPPOINTED IN YOURSELF WOULD YOU BE IF YOU DIDN'T GRADUATE FROM HIGH SCHOOL?"

Response Categories	Students whose parents put on "a great deal" of pressure to think about going on to (college) further training				Others			
	O.I. N=21 %	O.W. N=82 %	A.I. N=60 %	A.W. N=121 %	O.I. N=31 %	O.W. N=222 %	A.I. N=55 %	A.W. N=213 %
Very disappointed .....	85.71	98.78	80.00	88.43	80.64	91.44	67.27	80.28
Less disappointed .....	14.29	1.22	18.33	9.92	19.36	8.56	32.73	19.72
No answer .....	.....	.....	1.67	1.65	.....	.....	.....	.....

Chi-square values:

1. Comparison of highs and lows on the predictor variable =  $X^2 = 6.83$  p.01
2. Indian vs. non-Indian comparison on the predictor variable =  $X^2 = 12.7$  p.01
3. Oregon vs. Alberta comparison on the predictor variable =  $X^2 = 18.04$  p.01
4. Indian vs. non-Indian comparison among those who are high on the predictor variable =  $X^2 = 8.02$  p.01
5. Indian vs. non-Indian comparison among those who are low on the predictor variable =  $X^2 = 10.14$  p.01
6. Oregon vs. Alberta comparison among those who are high on the predictor variable =  $X^2 = 6.14$  p.05
7. Oregon vs. Alberta comparison among those who are low on the predictor variable =  $X^2 = 14.91$  p.01

O.I.	=	Oregon Indians
O.W.	=	Oregon Whites
A.I.	=	Alberta Indians
A.W.	=	Alberta Whites

while small and in the expected direction, was statistically significant at the .01 per cent level.

A comparison of all White students with all Indian students showed that White students were somewhat more inclined to report themselves "very disappointed" at the prospect of failure to graduate from high school than were Indian students. Differences were small but statistically significant at the .01 level. It is apparent, therefore, that degree of disappointment varies along ethnic lines. This conclusion is further supported by inter-ethnic comparisons of students who were high on the parental interest variable as well as among students who are low. In both instances White students were more prone to report slightly higher degrees of disappointment at the prospect of failure to graduate than were Indians. Again, differences were significant at the .01 level. The degree of disappointment reported by students, therefore, was influenced both by ethnicity and by parental behavior.

In order to determine whether variation along nationality lines was important, a comparison of Alberta students with all Oregon students was made. Oregon students were slightly more inclined to report themselves "very disappointed" at the prospect of failure to graduate from high school than were Alberta students. Differences were slight but significant at the .01 level. Similarly, an inter-nationality comparison among students who were high on the parental behavior variable yielded statistically significant differences at the .05 and .01 levels, respectively. From this it follows that the degree of disappointment by students was influenced also by both nationality and parental behavior.

Turning now to the question touching on the student's perception of parental attitudes toward his graduation from high school, the wording was: "How disappointed in you would your parents or guardians be if you didn't finish high school?". The response categories provided were "very upset", "somewhat upset", "very little",

TABLE IV  
DISTRIBUTION OF RESPONSES TO THE QUESTION: "HOW DISAPPOINTED IN YOU WOULD YOUR PARENTS OR GUARDIANS BE IF YOU DIDN'T FINISH HIGH SCHOOL?"

Response Categories	O.I. N=52 %	O.W. N=304 %	A.I. N=115 %	A.W. N=335 %
Very upset .....	81.00	93.09	51.30	79.10
Somewhat upset .....	17.00	5.92	39.13	17.91
Very little .....	2.00	0.33	6.96	2.69
Not at all .....		0.66	2.61	0.30
No answer .....				



and "not at all". The distribution of responses (see Table 4) showed that with the exception of the Alberta Indians among whom only 51 per cent checked "very upset", the proportions checking this response category among the remaining three populations were approximately 80 per cent.<sup>3</sup> This sizeable disparity in response among Alberta Indians is not readily accountable, although it is possible that apart from general cultural differences the difference in age and rural residence which characterizes the Alberta Indian population influences the response pattern.

Cross-tabulation of responses to this question with the predictor variables shows that the degree of parental disappointment perceived by the student was influenced by parental behavior, ethnicity and nationality (see Table 5). All differences resulting from inter-subgroup, inter-ethnic, and inter-nationality comparisons were statistically significant at the .01 level. It is noteworthy, however, that the impact of supportive action on the part of parents, while evident throughout, was most marked in the case of Alberta Indians. The differences between students whose parents put on "a great deal" of pressure and others was on the order of 50 percentage points—a difference which dramatically underscores the influence of parental behavior on students' attitudes.

### Summary and Conclusions

Having reviewed the findings, the question can now be raised concerning the implications of the data for the hypotheses which animated the inquiry.

The first hypothesis, namely, that parental behavior which is positive and supportive will influence student attitudes in a parallel direction, is consistently borne out by findings. Students whose parents put on "a great deal" of pressure to think about going to further training reported themselves "very disappointed" at the prospect of failure to graduate from high school, more frequently than did students whose parents exerted less pressure. Similarly, students who reported "a great deal" of parental pressure to think about going on to further training also frequently reported that their parents would be "very upset" if they failed to finish high school than did others. The importance of supportive parental behavior, therefore, was evident throughout.

The second hypothesis which asserted that Indian and non-Indian students would differ in their own and perceived attitudes towards high school graduation is likewise borne out by the findings. White students reported themselves "very disappointed" at the prospect of failure to graduate from high school more frequently than did Indian

<sup>3</sup>Students checking some other response category are referred to as the "less upset" in Table 5.

TABLE V  
COMPARISON OF STUDENTS WHOSE PARENTS OR GUARDIANS PUT ON "A GREAT DEAL OF PRESSURE TO THINK ABOUT GOING ON TO (COLLEGE) FURTHER TRAINING AND OTHERS ON RESPONSES TO THE QUESTION: "HOW DISAPPOINTED IN YOU WOULD YOUR PARENTS OR GUARDIANS BE IF YOU DIDN'T FINISH HIGH SCHOOL?"

Response Categories	Students whose parents put on "a great deal" of pressure to think about going on to (college) further training					Others		
	O.I. N=21 %	O.W. N=82 %	A.I. N=60 %	A.W. N=121 %	O.I. N=31 %	O.W. N=222 %	A.I. N=55 %	A.W. N=213 %
Very upset .....	85.71	100.00	75.00	92.56	77.42	90.09	25.45	71.36
Less upset .....	14.29	.....	25.00	7.44	22.58	9.46	74.55	28.64
No answer .....	.....	.....	.....	.....	.....	0.45	.....	.....

Chi-square values:

1. Comparison of highs and lows on the predictor variable =  $X^2 = 37.16$  p.01
2. Indian vs. non-Indian comparison on the predictor variable =  $X^2 = 53.62$  p.01
3. Oregon vs. Alberta comparison on the predictor variable =  $X^2 = 46.16$  p.01
4. Indian v. non-Indian comparison among those who are high on the predictor variable =  $X^2 = 21.31$  p.01
5. Indian vs. non-Indian comparison among those who are low on the predictor variable =  $X^2 = 30.20$  p.01
6. Oregon vs. Alberta comparison among those who are high on the predictor variable =  $X^2 = 8.19$  p.01
7. Oregon vs. Alberta comparison among those who are low on the predictor variable =  $X^2 = 50.31$  p.01

O.I.	=	Oregon Indians
O.W.	=	Oregon Whites
A.I.	=	Alberta Indians
A.W.	=	Alberta Whites



students. White students also reported more frequently than did Indian that their parents would be "very upset" if they failed to finish high school. Differences between the two ethnic groups, while statistically significant, were slight and appear to reflect a slight lag in the development of a strong emphasis upon high school graduation among Indians. On the whole, however, the high degree of similarity between the two ethnic groups in their response patterns showed an impressive consistency and indicates a rapid rate of change in attitudes among Indians favorable to high school graduation.

The third and final hypothesis is also borne out by the findings. Fewer Oregon Indians than Oregon Whites reported themselves "very disappointed" at the prospect of failure to graduate from high school, and correspondingly, fewer Alberta Indians than Alberta Whites did so. Conversely, a greater number of Oregon Indians than Alberta Indians reported themselves "very disappointed" at the prospect of failure to graduate from high school, and a greater proportion of Oregon Whites than Alberta Whites responded in the same manner. Concerning the degree of disappointment which parents would experience should the student fail to finish high school the same pattern of response was maintained. Oregon Indians more frequently reported their parents would be "very upset" than did Alberta Indians and Oregon Whites more frequently than Alberta Whites. The relative disparities shown on the basis of ethnicity were maintained when the comparison was made on the basis of nationality. This finding strongly suggests that Canadian rural and small town cultures lag behind those of the U.S.A. in the stress which is placed upon high school graduation. Nevertheless, it is again noteworthy that the high degree of similarity in response patterns between the two national groups reveals an impressive consistency despite cultural differences. And therein lies a potential danger.

The fact that Alberta and Oregon populations differ with respect to the issue of high school graduation suggests that no simple extrapolation of conclusion reached in studies carried out in American society to Canadian conditions, and vice versa, is possible. For clearly, had only Alberta or only Oregon students been studied in the present undertaking, the conclusions reached in either case could have been extrapolated to the other socio-cultural context only with important reservations and qualifications. Accordingly, it would appear to follow that the current widespread tendency in many areas of Canadian life to lift conclusions and policies from one socio-cultural context and apply them indiscriminately to another calls for serious review and reassessment.



# STUDENT GOVERNMENT PRACTICES IN ALBERTA JUNIOR HIGH SCHOOLS

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The junior high school as an independent section of our Alberta schools has been in existence for more than twenty-five years. Its origin was centred in the particular needs of early adolescence. The reorganization of the school group from the 8—4 basis to the present 6—3—3 structure made possible the tailoring of a program to suit the needs of the age group, whose individuals differed from both the upper elementary pupils and those of the lower high school grades. Such a program allowed for the inclusion of characteristics of differentiation, exploration, guidance, socialization, and integration.

Listed among the compulsory courses in the Alberta junior high school program is Student Government and Associated Activities. The *Junior High School Handbook* (1) in speaking of the objectives of this course states that

they can provide, first of all, real training for pupils in such democratic practices as elections, representation, and responsible executive control. They can give opportunity for the exercise and development of leadership, and at the same time teach pupils to evaluate leadership qualities. They can be strong socializing factors and a means of inculcating feelings of social responsibility. They can train the pupils in better use of leisure time. Finally, they can promote a more vigorous and effective functioning of the whole junior high school program.

It is apparent that the possibilities indicated in these objectives could be far reaching. The question arises: to what extent are they being realized in our Alberta junior high school?

## Statement of the Problem

It was the purpose of the study to investigate the student government programs presently in operation in Alberta junior high schools, and to assess, in a general way, the outcomes and benefits resulting from the program. The intent was to determine the types of organization employed, the types and degrees of sponsorship provided, the range of activities offered and degree of student participation in them. Also to investigate the machinery involved in the actual operation of the program, the time devoted to this area, and the benefits derived by the students, the school, and the community.

## Sources of Data and Procedures

The type of schools involved in the survey was restricted to junior high schools and combined elementary-junior high schools,

from three types of centres—city, town, and rural. The selection was made from the Grade IX examination list for 1960 and was limited to schools of the public school system, chosen on a geographical basis. In all, 175 schools were selected to participate in the survey. Of this number 57 were city schools and 118 were located in towns and rural areas.

Data were collected by means of two questionnaires: one to the staff adviser to the students' union, and the other to the student union president. It was intended that the former provide much of the information relevant to the organization of the student government program in the school. The latter was largely concerned with benefits being derived from the student government program. Following a pilot study the main survey was conducted in March, 1961.

Completed questionnaires were received from 99 schools, or 60% of schools participating. In addition 21 replies were received from schools indicating they they did not have a students' union, and 15 were returned unanswered due to miscellaneous reasons. Thus replies were received from 77% of school requested to participate in the survey. From these data 45 tables were constructed and per cent figures obtained.

### Findings

In so far as the information provided by the respondents is an accurate indication of the facts, the following conclusions may be drawn from the survey.

1. A majority of Alberta junior high schools schedule student government on the weekly timetable. Beyond this time, which is usually one period per week, there appears to be very little integration of student government work with Social Studies, Health and Personal Development, or Community Economics, as is recommended in the Junior High School Handbook.
2. Junior high schools in Alberta do not generally restrict the participation of individual students in extracurricular activities, although the principal usually retains the right to "veto" in any particular case.
3. Staff advisers in the student government program are generally experienced members of the teaching staff, who are interested in working with students in connection with their activities. It is usually through consultation with student officers that the task of training and guidance is achieved.
4. Student officers serving in the junior high school activity program are normally selected on the basis of suitability for the jobs and general popularity. The officers of president, secretary, treasurer, and editor are held in high esteem.



5. Student presidents in the student government program show a marked tendency to recognize the practical benefits which may be derived from their office. In most cases they regard the experience obtained as being valuable or very valuable.
6. Grade nine students take a more active part in the student government program than do those in grades seven and eight. In addition, girls, who are usually more mature in this age group, take a more active part than boys. Thus it appears that experience and maturity tend to show a positive influence on the degree of activity of individuals in the student government program.
7. An average of three-out-of-four students participate actively in the student government program. In addition, one-out-of-five junior high school students serve on the executive for a period of at least one year. The experience so gained as a result of this participation, coupled with the responsibilities involved in performing the many duties of the council, clubs, and committees, must necessarily add to the development of junior high school students towards responsible citizenship.
8. Sports and social activities consume more of the student union's time and energy than do other phases of the activity program. Activities of literary, musical, or benevolent nature receive less attention, resulting in an activity program lacking in balance.
9. Increased interest, more co-operation, and greater participation on the part of the student body are needed to bring about improvement in the activity program.
10. City junior high schools present a better organized system of student government than do those in town and rural schools. This is achieved through a wider use of representative government, elections based on democratic procedures, combined with greater pupil interest and more staff sponsorship.
11. Junior high schools in towns, while they do not provide as wide a variety of activities as city schools, tend to sponsor more sports, social events, and benevolent projects than do schools in city and rural areas.
12. Student government in rural schools show a greater tendency to sponsor money-raising projects, and those designed to benefit the school, than do their city or town counterparts.

### Recommendations

The following recommendations were based on the results of the survey and of accepted principles in the literature on this subject.



1. All junior high schools should provide some form of student government program irrespective of size, location, or conditions under which the school is organized. The size of enrolment need not, and should not, be a factor in determining the presence of an organization in which students can participate in administering the activities undertaken in the school. Small junior high schools should have simple organizations; larger schools, more complicated ones.
2. An essential step in setting up any system of government is the drafting of a constitution to guide the operations of that government. To help members to learn the rules, and to increase the stability of the system, a constitution should exist in written form. The survey revealed that more than half the junior high schools operate a student government program without a written constitution. It is therefore recommended that these schools take the necessary steps to develop a written constitution that will serve to guide and assist the students in performing the operations of their government.
3. In schools where programs of student government exist without the necessary freedom for students to act within their own "realm of influence", the control exercised by administration and staff should be relaxed.
4. In large junior high schools a greater effort should be made to orientate members of the staff to the basic purposes, organization, and goals of the student government. To succeed to the fullest the student government program needs the understanding and assistance of the Social Studies, Health and Personal Development, Music, Art, and Physical Education teachers, in addition, to the delegated sponsor and the principal. In short, the support of the entire staff.
5. An effort should be made by administrators and sponsors, in co-operation with the student council, to assess the degree of "balance" existing in the program of student activities. Through this assessment such activities as sports, "fun" activities, and fund-raising drives, may be curtailed somewhat on a busy program, to allow time for more activities of literary value, benevolent projects that provide the students with lasting satisfaction, or activities emphasizing such qualities as scholarship, character, service, and citizenship. The institution of long-term projects of sound and accepted values by the students and staff, increase in interest and value with the passage of time. Such projects as an academic honor roll, or affiliation with the Junior National Honor Society, should be considered. Another avenue that might well be considered is the co-sponsorship of worthy

projects with local, provincial, or national organizations—the town council, provincial welfare society, Ducks Unlimited, and the like.

6. Greater attention should be given in many junior high schools to the methods employed and the procedures followed in the realization of the student government program. More time and planning is required to make certain that the experiences gained are achieved in an acceptable way.
7. Sports should be organized, for the most part, on an intramural basis, with more attention devoted to teaching the fundamentals of individual and group games. Interscholastic sports, which often become strongly competitive, may have harmful effects on individuals of this age group when stimulated to engage in prolonged strenuous activity.
8. Finally this study recommends that in each school the administrator, sponsor, and student council, develop a system of continuous evaluation of its student government program. Such a system is needed to curtail activities and organizations that have run their course; one that will see that new activities or projects are initiated when the need arises.

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# THE SUPERINTENDENT AND PUBLIC RELATIONS

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## I.

Like business executives, school superintendents in a democratic society must be concerned with developing sound programs of public relations. The main purpose of such programs is to effect "a harmony of understanding between any group and the public it serves and upon whose goodwill it depends." (1-12) The school superintendent, as the person chiefly responsible for giving creative leadership to a school system, must be motivated by this purpose. He does not serve the best interests of society by adopting a defensive position in relation to the administration and provision of educational services. Unlike the business executive, he is not directly concerned with selling a product on a competitive market. Our society generally accepts as the major task of its public schools the provision of quality education for all children consistent with their abilities, interests and needs. The superintendent, then, must recognize the importance of building a clear understanding of the school system he administers. This involves the provision of factual information and objective interpretation about every part of the educational enterprise, but especially that part which has to do with the achievement of boys and girls. This concept is clearly stated in *Public Relations for America's Schools* in these words:

School public relations . . . must necessarily keep the child as its focus, against the essential background of society's needs. Its purposes, more specifically, stated, will include the following: (a) to inform the public about the work of the schools, (b) to rally support for proper maintenance of the educational program, (d) to develop awareness of the importance of education in a democracy, (e) to improve the partnership concept by uniting parents and teachers in meeting the educational needs of children, (f) to integrate the home, the school, and the community in improving the educational opportunities for all children, (g) to evaluate the offerings of the schools in meeting the needs of the children in the community, and (h) to correct misunderstandings as to the aims and objectives of the schools. (1-14)

The superintendent who holds the responsibility of leadership in a school system with such a set of purposes must be prepared, with the cooperation of all concerned, to let the facts speak for themselves and to be sensitive to the reactions of various segments of the public to the administration, financing, operation, programming and achievements of the school system. He must make use of existing means of communication and must be prepared, if necessary, to develop others. He must be ready to answer questions frankly,



honestly and courteously. Because others will interpret in the light of their own convictions, experience and opinions the reports emanating from the school system, it is essential that the superintendent give an official interpretation and the rationale for it. The superintendent must be prepared for negative as well as positive reactions to the information provided, to his interpretation of it, and to the actual practices on which it is based. As a man of integrity, he should welcome queries and criticisms as well as expressions of satisfaction. It is his duty, in the public interest, to insure that gross misinterpretation is met with the provision of further facts or with a clarification of information already available.

I have said enough to indicate that I favor for the school superintendent a program of public relations that is modest, informative, and sincere. Such a program must, of course, have a firm foundation. This foundation is the school system itself and the kind and quality of executive and professional leadership being given by the superintendent. On the administrative side, confidence will result if sound business principles are followed in organization, financing, accounting, and supervision. It is the superintendent's function both to assist the school board or county education committee in establishing policies and to insure that such policies are wisely interpreted and applied. On the service side, every effort should be made to select quality personnel, to enlist their cooperation, to provide them with good working conditions with all that this means by way of equipment, space, safety, and security. Essential, however, as are administrative and service functions, they exist only to facilitate and support the educational program. It is upon the effectiveness of that program in meeting the needs of society that the success of a school system will be measured. It demands curricular offerings based on cooperative planning that has involved both laymen and professionals. It demands, too, a carefully selected, well-prepared, highly responsible, and completely dedicated teaching force on whose loyalty and cooperation the superintendent and his staff can rely. A wisely-conceived and planned curriculum in the hands of intelligent, educated, creative, and professional teachers should meet the needs of the boys and girls in our schools and hence of society. To the extent that these needs are met, the educational program is sound. In providing the means to achieve this purpose, the superintendent and his staff will be challenged to develop varied programs to serve pupils of varying abilities and interests. This may mean, besides basic offerings for the majority of children, special programs for the intellectually or artistically gifted, the mentally or physically handicapped, the technically or business orientated. While programs will of necessity vary in kind and con-

tent, they should be the best that can be given to meet the purposes for which they have been planned and the needs of those for whom they are designed. I must agree with those who say that school public relations take their beginnings in the classroom. Each pupil, administrator, teacher, and service employee is part of the image which the school system reflects.

## II.

In developing harmony of understanding, the superintendent must be conscious of the public, and more particularly the various sections of the public, who are to be kept informed and whose goodwill is desired (11-224). Included are school board members, administrative staff, clerical workers, school custodians, teachers, pupils, parents, employers, other taxpayers, communications-media workers, and special-interest groups. There is a body of opinion and research with respect to the superintendent's relations with these publics. We know, for example, that he cannot afford to ignore any of them. Research has indicated, among other things, that:

1. The more removed the public is from the school, whether physically or otherwise, the more difficult it is to maintain a positive interest in its activities. (7)
2. The more directly the public is involved in the school through its children, the greater is its interest. (5)
3. The higher the educational and socio-economic status of parents, the greater are their expectations from the schools and the greater is their acceptance of what the school is attempting to do. (5,6)
4. There is a close relationship between the way schools are administered and the response of the public to them. (8)

It is not my intention to review the large body of research related to communications and public relations as these affect the superintendent and others in the educational endeavor. What I want to do is to stress the importance to the school administrator of knowing the conclusions of that research as one guide to action.

In his relations with the many publics already mentioned, the superintendent must remember that whether he is acting directly or through others in the school system, communication for the purpose of developing understanding is a two-way process. This is true whether the contact is one between the superintendent and the press, a principal and the Home and School Association, a teacher and a parent, or a pupil and a prospective employer. While this mutual exchange is essential at all levels and on all topics, it is



especially necessary as between those who develop policy and those who are affected, directly or indirectly, by that policy.

Communication is often achieved by involving the public in appropriate affairs of the school. In our current planning of vocational education programs, for example, we need the active assistance of business and industry. By the same token we must seek cooperation on a wider front in curriculum development, in establishing society's needs, in providing adequately for guidance and counselling, and in evaluating our results. As society becomes more urbanized, the need for cooperation increases if there is to be any consistency of goals and practices as among the school, the home, and the community.

I believe that I have said enough to point up the fact that the school superintendent serves many publics. Naturally he will use different means in relations to these depending upon their interest, influence, motivation, and concern. Whatever these means, however, he will be governed by certain basic principles of sound public relations, particularly as these are related to educational matters. These principles may seem to be merely the application of common sense to the development of mutual understanding about schools and education. If that is so, then I am all for common sense. I propose to mention several principles and to suggest ways in which they involve the school superintendent. In doing so I am drawing heavily upon suggestions enunciated by the authors of *Public Relations for America's Schools*. (1—16 to 34)

First, the program of public relations developed by the school superintendent must be honest in intention and execution. It must tell clearly and accurately whatever is being communicated to the public. There must be no subterfuge, no dissembling, and no suppressing of facts. "It is not surprising" wrote D. G. Rutledge, Director of Publication for the Toronto Board of Education, "that we should be very touchy about bad publicity these days. Public interest in education is almost pathological, and the constant glare of publicity is pitiless. Educational problems are complex, educational improvement is inevitably slow, and public expectations of education are unrealistic. And so we are in danger of falling into a natural but serious error. We may become more concerned with our public image than with the reality of our achievement. It should go without saying that the basis of our relations with the public must be the job we are actually doing. No matter what the pressures on us, we must remain honest. If there are things which we are not proud of, we should not hide them but improve them. . . ." (12-255)

In an enterprise as important as the operation of its school system, the public has every right to keep informed. Accounts of



board meetings, of new administrative procedures, of curricular innovations, of any change in means of reporting to parents, should be regularly available. Such accounts may be provided in a summary of the minutes of regular or special meetings, through press conferences, or by the circulation of pamphlets on specific topics. Since the financial aspect is of such importance to ratepayers, the superintendent should see that frequent financial statements are issued and that the board and accounting staff keep the financial phases of the operation under constant review. Through talks by the superintendent or members of his staff, through specially prepared leaflets, through reports in the press or over radio or television, the superintendent should keep the public aware of what the school system is doing and why. I have seen an excellent series of leaflets prepared by one school authority to explain to parents and others interested the nature of the curriculum and the approved methods of teaching being employed in the basic school subjects. Surely this is a way to create a favorable climate for the school program. I am convinced that similar means must be taken to explain any proposed change or adaptation whether it relate to the introduction of a controversial program in French in Grade IV, a continuous progress plan in the elementary school, homogeneous grouping and streaming in the secondary school, or dress regulations. Unless the public is given the facts, there will be misunderstanding, questioning, and sometimes well-intentioned opposition to something that would be welcomed by an informed public. The superintendent should guarantee to the public accurate reports concerning pupil progress and any experimental research that is being conducted. Such reports should reveal objectively the negative as well as the positive, failures as well as successes. The superintendent must establish a reputation for reliability. It is essential, therefore, that what is reported be an exact reflection of what exists. Those who receive the information have every right to ask questions and to place their own interpretation on the answers given. I maintain, however, that the superintendent as a professional educator has a responsibility as well as a right to interpret these same facts in the light of his own convictions and of the purposes set for the schools. Institutions other than school systems do the same thing without loss of face or of public confidence. It seems to me, however, that the school, being a public institution, can afford less that is negative than can business or industry. I like to believe that the superintendent who is frank with his public and who adheres to the first principle mentioned will be accurately quoted and will have the information which he provides treated fairly and sympathetically. He must be prepared to have others differ from his interpreta-

tions, but he has a right to expect the same gentlemanly treatment that he, hopefully, has demonstrated.

Second, the program of public relations developed by the superintendent must be a natural outgrowth that reflects what actually happens in the school system. What the public sees when it looks in from the outside must square the facts that have been given. This means that the superintendent and his staff must take pride in what the system is and does, and that they must themselves have confidence in the school and its program. This places a heavy responsibility indeed upon the superintendent to give the kind of leadership that will result in a well-organized system and an adequate program. This involves careful planning within the system. Pupils should be proud of their school and satisfied with the experiences—educational and otherwise—that it offers. The staff, too, must be convinced that it is working in a well-run and vital institution. The result will be a good spirit within the system. This is fostered where the worth and dignity of each individual is accepted, where there is a sharing of planning and responsibility, and where there is recognition of contributions made to the general welfare. This does not mean that all must think and act alike. It means rather that all opinions and ideas be considered in arriving at the ultimate organization and program adopted. Day in and day out, the superintendent, the members of his staff, and the pupils in the schools are reflecting the values held in the system and the degree of satisfaction with its accomplishments.

Third, the program of public relations developed by the superintendent must be continuous. This has already been implied in the second principle stated, but it deserves the special emphasis given in this statement:

Educators can root this principle of continuity in the findings of psychology. The laws of learning, with their several amendments, indicate that use and disuse largely account for the prevalent level of performance in many aspects of human response. These laws appear to apply to learning, to emotional reactions, and to attitude formation. A continuing stimulus produces a more predictable and stronger response than an intermittent or random stimulus. Public opinion in action will result from the combined effects of learned experience, emotional set, and attitude formation—the bases of opinion. Frequency and regularity of stimuli must be regarded as definite and necessary parts of the public relations plan. (1-22)

Whether we plan it that way or not, certain aspects of school public relations are intrinsically continuous. Pupils come home from school every day; teachers meet with organized interest groups as well as in informal situations; school board meetings are open to the public both directly and through representatives of press, radio and television. But the formal part of the public relations



program should also be continuous. If such a program rests on providing information as a basis for understanding, then there is no alternative but to maintain the flow of such information.

Fourth, the program of public relations developed by the superintendent must be positive in its approach. His eye should be on the present and the future. Communications research indicates that very few opinions are altered by negative and defensive tactics. This does not preclude giving, through objective reporting, information that is unfavorable. An experiment to improve students' skill in problem solving many fail to produce an anticipated result. In reporting this fact, the superintendent must point up the significance of problem solving in a modern society and the need to develop more effective techniques and procedures. He should then indicate some of the more promising approaches which are to be attempted to solve the problem. Even when he is dealing with misrepresentation or misinterpretation of facts about the school system, the superintendent should make his clarification in a positive way by giving further objective evidence as a basis for better understanding. In adopting the positive approach, careful attention must be given to choice of words and to phrasing of ideas. One should avoid colored words that are negative in connotation. This is true whether the superintendent is writing a statement for the press, the principal is editing a brochure on current content and methodology in the teaching of arithmetic, or the teacher is preparing a report card to be sent to a parent. It is naturally easier to be positive when everything goes well, but the successful superintendent is the one who remains in control of every situation whether it is unfavorable or favorable in its result. The public has confidence in the leader who faces his problems realistically and who remains in command in the attack upon them.

My own reaction to advertisements which point out the shortcomings of a competitor's wares is unfavorable. I prefer the advertiser who rests his case on the merits of his own product. In the same way I prefer schoolmen who adopt the positive approach in communicating with their publics.

Fifth, the program of public relations developed by the superintendent must be comprehensive and varied. While every reasonable means of informing the public should be used, there is no substitute for direct face to face communication. Such direct contact should be made whether one is providing information to parents, to teachers, or to the press. It is always better for the superintendent to make a statement personally than to do so through an intermediary. He must take advantage of opportunities to address groups of parents, business men, teachers, and pupils. Where it becomes



impossible to employ direct contact, the superintendent should use means that have nearly the same effect. These include, in order of effectiveness, television, radio and writing. In this connection Blair Fraser recently warned a group of school administrators at Banff "Don't let professionals come between you and the people you're talking to, and offer to explain you to each other. Make your own contacts . . ." (4) Too few of us in public education have taken the important step of getting to know broadcasters and editors or of making the most effective use of the means of the mass modes of communication to inform the public about its schools. Through his staff the superintendent should be able to multiply the opportunities for the use of these and other media. Certainly one means of direct contact between the schools and the home is the teacher-parent interview as a substitute for, or at least a supplement to, the usual means of reporting pupil progress. Some schools have experimented with classroom demonstrations to show the way in which various types of teaching-learning situations are handled in a modern school system. Direct observation, radio broadcasting, and televising have all been used successfully.

Less effective than personal contact is the printed word. While I have little hope that most of our mimeographed statements—especially if they are long—will be read by parents, there is an important place for printed articles, leaflets, and brochures. I shall have a further word to say about publications later.

Obviously, as has been said many times before and as we emphasized again by Mr. Fraser in the context already referred to, ". . . in everything connected with educational method . . . as distinct from educational organization . . . in anything directly concerned with your work with the child, there is no better means of communication than the child himself." (4)

One of the reasons why the public relations programs must be comprehensive and must use every available technique and procedure is that, even with the best means of communication, ideas and facts become distorted or only partial understanding is achieved. It seems to me that we are witnessing this today in attempts to set the stage for and to explain the rationale of the so-called modern mathematics. The same problem of the inadequacy of means of communication is apparent in the limited results of the work of the structural linguists and descriptive grammarians in influencing the study of language.

There is, of course, another and almost opposite danger: the rejection of desired action because of overemphasis—and misinterpretation. I am reminded of a study referred to recently by Professor Lazarsfeld. The purpose was to warn the public against quacks

using X-ray treatment and to support the use of X-ray treatment by trained, licensed operators. The effect of a multiple-media attack on the quacks was to create the reaction, "I will never use X-ray treatment."

The fact still remains, however, that the broad and varied approach to information giving and hence to the development of a firm basis for public relations is sound. At the same time one must appreciate and indeed try to anticipate difficulties that may arise.

Sixth, the program of public relations developed by the superintendent must make him sensitive to the various publics that he serves. Fundamental to this principle is one of the oldest and soundest pedagogical rules: start where you are and move from the simple to the complex. The superintendent must be alert to every guide to the opinions and reactions of his several publics. He will gain much from talking with pupils, from informal discussions with business executives, from editorials and letters to the editor, from panels at Home and School Association meetings, from reports of teachers, from evaluation of pupil achievement, from the conclusions of well designed research. He should keep his ear to the ground for suggestions, criticisms, or reactions to all phases of the operation of the school system. Like the successful physician, the superintendent must be able to detect the symptoms of disorder as well as the indications of good health. Here his staff, his secretary, and probably his wife can be helpful. Certainly he should provide for a clipping service and for a source of reference to current articles and books that reflect society—its aspirations and its needs. Periodicals such as *The School Bell* and other publications of the National School Public Relations Association should be available, and significant articles should be read, their contents analyzed, and their pertinent recommendations applied.

Seventh, the program of public relations developed by the superintendent must be simple. In the first place ideas are best understood when placed in a simple context. Not only must the program be simple, but the communication must be so clear that words do not stand in the way of meaning. "The man who can't put what he has to say in simple terms," said Blair Fraser, "doesn't understand it himself, and uses jargon to conceal absence of thought." (4) Every good teacher recognizes the truth of that statement. I can enumerate many examples from my observations of teachers, as I am sure you can from yours. I once saw, for example, a teacher on the staff of our own demonstration school lead a group of Grade II pupils through an understanding of relationship in the number system by using a simple, practical approach with prepared realia. At a different level, I once observed Charles Carpenter



Fries develop his approach to linguistic relationships by use of a few simple illustrations. A pictorial demonstration, a graphical representation, a projected film, a crisp phrase, will often accomplish what involved and over-loaded sentences fail to do. Much will depend upon the public to be informed. Certainly simplicity should not be such as to insult the intelligence. It is important that the approach be appropriate to the purpose and the audience to be reached. Other things being equal, the simple approach, carefully conceived, is best.

Eighth, the program of public relations developed by the superintendent must be cooperatively planned and executed. In other words, it should involve all who are connected in any way with the school system. Trustee, clerical and service staff, junior administrators, teachers, and pupils must all feel a responsibility for informing the public outside the school about what it stands for and what it does. In the same way they are channels by which ideas from outside the school reach the superintendent as a guide to future action. Much may be done, too, by involving pupils and the public in planning school activities. It is especially important that the public have a share in determining the aims and purposes of the school program, that they be kept informed about any major changes in school organization or school finance, that they be consulted about alterations in school boundaries and the reasons for these alterations, and that they be aware of modifications in the curriculum and in teaching procedures. Reasonable advantage should be taken of the special contributions of laymen to the schools, whether these contributions involve them as planners or as consultants.

### III.

In stating eight principles of a sound public relations program for school superintendents there has been considerable overlap. This is inevitable because such a program is an entity, a sum of its parts, and not a diversity. Having made this point, I wish to comment briefly on three media that are particularly relevant in the superintendent's public relations plan but which give him considerable difficulty.

I wish first to say something about the superintendent and the press. Our newspapers have not always been kind to education and educators. This is understandable. In a period of rapid cultural change such as we are experiencing, there are inevitable differences of opinion about the appropriate part of our heritage the school should seek to transmit, about the degree to which it should adapt its curriculum, procedures and organization to keep pace with economic, social and technological change, about the extent to which



it should take steps that would seem to make it an agent in creating new social and cultural patterns. The best we can hope for is a mature press that reflects these problems and that reports without bias the total story. In *Education and the Press*,<sup>(3)</sup> a booklet prepared by the National Public Relations Committee of the Canadian Conference on Education, the position of the press is clearly stated. What the school administrator must do is to keep newsmen informed, to take them into his confidence, to be frank and objective in making factual reports, and to insure that they are invited to observe the schools in action and to attend educational meetings of all kinds. We must be mature in our dealings with the press, just as we expect its reporters and editors to be mature in their reports and editorials. We must expect the press to record all sides of a news story without bias. It must not, in the public interest, confine its news to one source or to one side of a controversial issue. Many newspapers, realizing this, have appointed educational editors with a double background and understanding of education and communication. It behooves us to see that we give them our cooperation. If the press reports accurately, we should ask no more. It is entitled to its editorial policy and to its right to analyze and interpret the news in the light of that policy. If its policy is clearly stated and consistently followed, we should be satisfied. Newspaper editors are not public relations agents for any interest group—including schoolmen. Like the rest of us, they have the privilege, and indeed the duty, to state their opinions. Not all newspapers hold the same editorial policy. The critical reader must take account of this fact. In relation to the Second Canadian Conference on Education, for example, editorials made evaluations that ranged all the way from condemnation to eulogy.

One other point should be made. Let the professional newsmen do the writing. Presumably they know their business. Provide them with the information including the texts of your speeches and written articles, but leave it to them to do the reporting.

Second, wise use should be made of radio and television, especially the latter. I am convinced that the superintendent and his staff could interpret the schools to the public more effectively than they do by appearing themselves on television, by arranging for reports of special features or of regular classroom activities, and by providing instruction by competent teachers in curricular areas that might be enriched through this medium. I am thinking particularly of the teaching of modern languages, music, art, and drama. As is the case with the press, the superintendent should know broadcasters and telecasters and should keep them informed about school matters. When he does wish to use these media, either by invita-

tion or otherwise, professional producers should be used to make the broadcast or telecast as effective as possible.

Third, a less direct but still a very important means of providing information is through the publications of the school system. These must be quality productions which in large systems are prepared by an editorial staff hired for the purpose. Fewer and better publications should be the aim. They should be attractive in format and illustration, and should be meticulously written and edited. Such publications will reflect credit on the school system that produces them. The art work, the illustrations, and the layout for such publications should be done by professionals. "Business has learned long ago" to quote Mr. Rutledge "that the most economical way to get a special job done is to hire a specialist." (12-255) It is also the most effective.

#### IV.

There is another feature of the public relations program to which the school superintendent must give thought. This is the matter of evaluation. He must provide that whatever public relations program is in effect—either simple or complex—be under constant and critical review. We have said enough about public relations being a two-way process to show one avenue for evaluation, but it is wise for the superintendent to set up more formal means through questionnaires and reports. The results of these he will use as a basis of future planning.

#### V.

The school superintendent who is likely to make a success of the type of public relations suggested in this paper is a professionally prepared educator with a broad background in the social sciences and in professional education. He should, I believe, have a background in sociology, political science, philosophy, economics and history and in the educational aspect of psychology, sociology and philosophy. He must have an understanding of sound business organization and practice. He must have had successful experience both as a teacher and a junior administrator and must have had specialized preparation in general and educational administration. He must be articulate both through speech and writing and must be the type of person who is accepted by his employers, his staff and the public as a man in whom absolute trust can be placed and who is known as one willing to cooperate in all matters related to school affairs. As the tasks of education become increasingly complex, society will have to demand persons with such backgrounds as its superintendents of schools. If it does so, I for one, shall have little fear about public relations in the superintendency.

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# THE RELATIONSHIP BETWEEN SUBJECT MATTER COMPETENCE OF TEACHERS AND THE QUALITY OF SCIENCE INSTRUCTION IN THE ELEMENTARY SCHOOL

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How much science does a teacher need to know in order to teach the subject effectively in the intermediate grades? Although many have a deep practical interest in questions such as this, few answers are known. No concrete evidence whatsoever appears to exist that bears on this specific topic—and opinions vary.

(1) Many assume there is a positive relationship. A teacher who himself has a good understanding of the concepts will do a more effective job of instruction.

(2) Some assume that at the elementary level this is relatively unimportant. The arguments being that; (a) the subject matter is so simple that any adult is adequately familiar with the concepts to be taught or (b) the subject matter is so simple that any teacher who is competent can easily become familiar with the content, thus eliminating the effect of any deficiency in background that might have existed prior to the period of preparation.

(3) It has even been suggested that the teacher who must “learn with the children” may teach science more effectively; perhaps because he will not short-cut the learning process by assuming concepts to be self-evident when they are not.

In the general context of research in teacher effectiveness it is necessary to define carefully the criteria which are considered relevant. The current edition of the *Encyclopaedia of Educational Research* makes this statement: “More than a half-century of research effort has not yielded meaningful, measurable criteria around which the majority of the nation’s educators can rally. No standards exist which are commonly agreed upon as the criteria of teacher effectiveness.”<sup>1</sup> While recognizing the many practical difficulties, there is a growing tendency to emphasize student growth as the ultimate criterion.<sup>2</sup> One effect of this emphasis is to concentrate efforts on those aspects of student change which can be measured with some degree of accuracy (i.e. acquisition of knowledge). All such studies, including the present report, should be read with this

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<sup>1</sup>Harold E. Mitzel, “Teacher Effectiveness”. *Encyclopaedia of Educational Research*, 3rd Edition. Ed. Chester W. Harris (New York: The Macmillan Co., 1960), p. 1493.

<sup>2</sup>Remmers, H. H. (Ch.). “Second Report of the Committee on the Criteria of Teacher Effectiveness”, *Journal of Educational Research*, Volume 46 (May 1953), pp. 641-58.

in mind. There is no reason to assume that the teacher who obtains satisfactory progress toward one goal or objective is also the teacher who will promote equally satisfactory progress toward other, less easily measured goals.

Another aspect of the problem of research in teacher competence is discussed by Levin. He states,

"The most complete picture of the teaching process would be to predict from the antecedent conditions to the classroom behavior and in turn from behavior to pupil effects. Characteristically the middle step has been omitted, so that the result is a statement relating certain antecedent characteristics of the teacher to some aspects of pupil change.

"Although the procedure is legitimate, it presents only a partial picture. For example, there are some interesting findings that secondary school pupils taught by teachers who had neither a college major nor minor in the subject they were teaching scored higher on achievement tests than those students whose teachers had such college training. The findings are indeed perplexing. Notice that this research design has bypassed what the teacher is actually doing in the classroom. Without the added information we can only conjecture about these contrary-to-common sense findings."<sup>3</sup>

Description of classroom behavior of pupils can also serve as process criteria, defined by Mitzel as "... those aspects of teacher and student behavior which are believed to be worthwhile in their own right ... their presence in the classroom is sometimes looked for because of their assumed mediating effects on product criteria."<sup>4</sup>

The present study has been planned in two phases. The first has been to make a preliminary check to determine if any relationship can be detected between teachers' knowledge of science and the restricted criterion of successful teaching represented by student achievement on examinations used by the City of Calgary at the sixth grade level. The second phase will be to observe in the classroom a group of teachers characterized as having some knowledge of important science concepts and a group that can be described as less knowledgeable.

#### *Related Studies:*

There has been relatively little work that focused on the relationship between teacher knowledge and student achievement.

A recent investigation involving 55 teachers of elementary grades in Brooklyn, New York, which used as a criterion children's achievement and considered a number of other variables in relation to this, found such variables as teacher's knowledge of professional education and the liberal arts to be negligible in their effect. However, the author's comment, "A definite negative relationship which does not quite reach statistical significance at the five percent level ...

<sup>3</sup>Harry Levine, "A New Perspective on Teacher Competence Research", *Harvard Educational Review*, Volume 24, (Spring, 1954), pp. 98-105.

<sup>4</sup>Mitzel, *Op. Cit.*, p. 1484



appears to exist between the liberal arts knowledge of the teachers and the achievement of their pupils. This same relationship was noted in a direct correlational analysis . . . ”

The results of this correlation analysis are given in Table I. Note that the scores for only 42 teachers from the original sample of 55 are included in this data. This reflects a difficulty also encountered in the present study; the reluctance of some teachers to volunteer for testing.

Ackerman has reviewed the literature concerned with teacher competence as based on the criterion of measured pupil change. He notes that Rostker (10) has reported a significant relationship between teaching ability and the teacher's knowledge of his subject matter; Hughes (5) found that pupils of teachers who had specialized in physics made average scores above mean scores of all those taking his test of physics; but on the other hand, Davis (2) reported that students of teachers who had not had specialized training in the subject which they taught scored higher on subject matter achievement tests than did students of teachers who had received such training. A major exception was found in the results of the test in chemistry. Here the pupils of qualified teachers (a college major or minor in chemistry) far exceed those of the unqualified teachers.

Ackerman comments,

These results lead to the conclusion that perhaps in certain highly technical areas the training of the teacher in his subject area is a matter of great importance. This does not seem to be the case in other areas. We might conjecture that the teacher who does not have specialized training in the subject which he teaches is learning as well as teaching. The similarity between his position and that of his pupils may engender a great understanding of the difficulties involved in the assimilation of the material. This leads to a greater awareness of the needs for concentration on many aspects of the work at hand. Conversely, the specialist may have set goals which are beyond the capacities of his pupils and may have thus succeeded only in hindering their progress. Further study of this problem seems wholly warranted in the light of the available information.<sup>5</sup>

A report by McCall and Krause summarizes the results of an extensive study carried out in North Carolina. A criterion score called teaching efficiency or merit was composed of weighted growth in nine areas with the influence of I.Q., drive, home, class size, and regularity of attendance also considered. The criterion scores for 73 teachers ranged from twenty to eighty-eight. A number of relationships between this score and teacher characteristics were determined. Teacher knowledge of the subject matter showed no correlation ( $-.06$ ) with efficiency.<sup>6</sup>

<sup>5</sup>Walter I. Ackerman, "Teacher Competence and Pupil Change", *Harvard Educational Review*, Volume 24 (1954), pp. 273-289.

<sup>6</sup>W. A. McCall and Gertrude R. Krause, "Measurement of Teacher Merit for Salary Purposes", *Journal of Educational Research*, Volume 53, (October, 1959), pp. 73-75.



A study carried out by Stephens and Lichtenstein in the early 1940's compared teacher scores on standard tests with a measure of student change in fifth grade arithmetic referred to as class efficiency (pupil growth in relation to mental age), finding a correlation of  $-.52$  between C.E. and percentile rank in fundamental processes in arithmetic. Other results are summarized in Table I. In reference to these the authors state:

Most of the relationships are small absolutely and all are small with respect to the P.E.s. Interesting negative relationships between C.E. and intelligence, reading comprehension and knowledge of arithmetic are *suggested*. The predominance of negative relationships suggests the hypothesis that ability to do well on a written examination (if there is such a general ability) is correlated negatively with ability to teach arithmetic in grade 5.<sup>7</sup>

TABLE I  
SUMMARY OF INVESTIGATIONS INTO THE RELATIONSHIP  
BETWEEN SUBJECT MATTER KNOWLEDGE AND STUDENT  
ACHIEVEMENT

Report	Level	Variables		Results
Heil, et al (n=42)	Elem.	Criterion Mean class achievement, corrected for I.Q.	Teacher Knowledge of liberal arts.	$r = -.235$
Stephens and Lichtenstein (n=20)	5th	Class efficiency in arithmetic.	Knowledge of fundamental processes in arithmetic.	$r = -.52$
			Arithmetical reasoning.	$r = -.04$
McCall and Krause (n=73)	6th	Teacher efficiency.	Knowledge of subject matter.	$r = -.06$
Eccles (n=27)	6th	Science test scores.	Background in natural sciences.	$r = -.04$
Lindstedt	9th	Scores on grade 9 departmentals.	Number of mathematics courses completed.	no significant relationship.

<sup>7</sup>J. M. Stephens and Arthur Lichtenstein, "Factors Associated with Success in Teaching Grade Five Arithmetic". *Journal of Educational Research*, Volume X, (May 1947), pp. 683-694.

In Alberta, Lindstedt found that the number of university mathematics courses taken by teachers does not reflect any significant difference in the results of grade IX examinations. Five thousand, six hundred and seventy-seven pupils were included in this analysis. He also mentions an investigation by Shunert (11) who found in a sample of 192 teachers of high school mathematics in Minnesota no significant relationship between the teachers' mathematical training and student achievement in either elementary algebra or plane geometry.<sup>8</sup>

*Measuring Instruments and Sampling Procedures for Phase One:*

Does a relationship exist between teachers' knowledge and student achievement on grade six science tests?

The teacher's knowledge of science was defined as the score on the Iowa Tests of Educational Development, Test 2, General Background in the Natural Sciences.<sup>9</sup> The test was given individually to those teachers who consented to take part in the study.

Student achievement was measured by scores on a city-wide test of science prepared and given by the City of Calgary Public Schools. All sixth grade pupils in the city wrote this test during the first week of June, 1962. No estimate of student knowledge prior to instruction was available but the test relates very closely to the specific content outlined in the course of studies for grade six. No data is available as to the reliability of the test. Validity is affected by the inclusion of some items which are not, strictly speaking, science information or skills (e.g. five points of the fifty were for spelling.) Also individual items suggest the possibility that efforts to teach for the recall of specific information and terminology will be more readily reflected by the instrument than would an effort to go beyond this to the ability to comprehend and apply. The purposes of this test are given by the School Board as follows:

1. To provide data for evaluating the Accelerated and Four-Year Programs.
2. To assist the teacher by:
  - (a) Re-emphasizing the content and skill objectives of the science program.
  - (b) Suggesting some appropriate methods of testing content (facts and understandings) and skills in science.

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<sup>8</sup>Sidney A. Lindstedt, "An Analysis of the Relationship Between Certain Qualifications of Grade IX Mathematics Teachers in Alberta Schools and the Results of Their Students in the Final Examinations for the Year 1957-1958", unpublished Master's thesis, University of Alberta, Edmonton, 1960.

<sup>9</sup>*Iowa Tests of Educational Development*, edited by E. F. Lindquist. Science Research Associates, Inc. Chicago, 1952.



3. To provide medians by which teachers may compare the achievement of their class with that of others within the school and the city.
4. These tests are *not* to be used as a basis for promotion.

In practice many teachers must accept this test as representing the goals of instruction in sixth grade science, possibly to the point of omitting from consideration those goals which are explicitly excluded, such as attitudes and the more involved intellectual skills. It would seem reasonable to assume that the teachers with the best background in science would be less likely to concentrate solely on teaching the facts, understandings and skills indicated by this and previous tests. It is therefore less valid as an instrument for measuring achievement in the classes of these teachers.

*The Sample:* Since the teacher tests had to be given individually it was necessary to restrict the sample size to thirty, a smaller number than would otherwise be desirable.

Correlations would have to be in the order of a .4 for significance with a sample of this size. Nothing in the literature suggests that science knowledge of the teacher would have anything like that effect on the variation in student achievement.

The names of all teachers assigned to a sixth grade or combined fifth-sixth grade in Calgary were obtained and a random sample of thirty drawn. Since these teachers were also asked to agree to participate as needed in the second, or observational, phase of the study those who were not to be teaching sixth grade next year were eliminated as this information became available. When a person was omitted for this reason another name was selected to replace him. Twelve individuals were replaced for this cause. Some of the teachers selected were also principals who were relieved in the classroom during part of the week by other teachers. When the relieving teacher taught science this person was asked to take the principal's place in the study. Two such substitutions were made.

In four cases informal arrangements had been made within the school for some specialization at this level. Such classes were omitted and a new name drawn since it was desired to restrict the study to the "self-contained" classroom. Finally, nine teachers contacted were not willing to take the test and/or to have the observational follow-up made. In three of these cases the reasons for refusing were, in the opinion of the investigator, quite substantial and due to special circumstances unrelated to either teacher or student achievement. In six of the above cases reasons were not given or, in the opinion of the investigator, left some doubt as to whether the real reason might not be a feeling of inadequacy. Some bias is



doubtless introduced by the omission of these teachers. However, it does not necessarily follow that those teachers who feel inadequate are justified in this feeling. In total thirty-eight teachers were asked and twenty-nine accepted. Of the latter, one could not be included in the phase one analysis since the class was a combined fifth-sixth grade and had studied the material outlined in the course for grade five, thus clearly making the test results invalid.

### *Results:*

Out of the sixty items on the Iowa test the mean raw score ( $n=29$ ) was 45.9 with a S.D. of 5.27. The range of score was from 35 to 58. The normative data available for this series of tests is based on the results in 254 U.S. high schools. When comparisons are made between these and the results in Calgary, the mean standard score of 24 indicates that as a group these teachers would compare to grade 12 classes in the 98th percentile of U.S. schools. Individual scores were comparable in range to the 58th to 99th percentiles of the normative group.

These results confirm previously published material<sup>10</sup> indicating that, even though certification requirements for Alberta teachers are not rigorous, in terms of science knowledge our teachers are better prepared than a casual comparison with teachers in the U.S. might suggest.

The correlation between teacher scores and average class scores was  $-.04$ . This is not statistically significant and should be considered as indicating that no relationship could be detected.

### *Discussion:*

Several of the studies cited above, as, for example, Heil, et al (4) and McCall and Krause (7), conclude that personality traits of the teacher have a significant relationship to student achievement while traits such as knowledge of subject matter, intelligence, and professional knowledge do not. This is of greater interest to those who select teachers than to those who educate them since it is presumably very difficult to change the personality structure of an adult through the usual University procedures and lecture-discussion, readings, etc. On the other hand any teacher's grasp of subject matter can most certainly be improved. Few have doubted that this is worthwhile in that, all other conditions being equal, it would serve to improve instruction. However, the total of the research discussed above and summarized in Table I contains a hint of an interesting possibility. Even with better control of variables such as

<sup>10</sup>P. J. Eccles, "A Comparison of the Science Background of Elementary Teachers-in-Training at the University of Alberta, Calgary and the University of Illinois", *The Alberta Journal of Educational Research*, Volume 8, No. 1, (March, 1962), pp. 3-10.

I.Q. than was true in the present study, the relationship between subject matter knowledge and student achievement has been, without exception, slight. It has also been negative. It would raise many interesting questions if any such tendency could be demonstrated. It should be possible with adequate numbers and through experimental and statistical control of other relevant variables (including broad personality patterns) to obtain more definitive answers.

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## BOOK REVIEWS

*Training for Community Development: A Critical Study of Method*, by T. R. Batten. London: Oxford University Press, 1962. Pp. viii and 192. \$3.25.

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*The Southern Regional Education Board: Ten Years of Regional Cooperation in Higher Education*. By Redding S. Sugg Jr. and George Hilton Jones. Baton Rouge, Louisiana: Louisiana State University Press, 1960. Pp. xv and 179. \$4.00.

The two books reviewed here are essentially case studies in educational innovation. Both describe attempts to create educational procedures and organization better suited to solving community and regional problems. The first deals with leadership training for community development, which is an adult education movement of far reaching importance in underdeveloped countries, including Canada's own northland. The second book reports the evolution and work of an agency pioneering a regional approach to higher education for sixteen Southern States, an approach not unknown in Western Canada, where universities have been cooperating on an *ad hoc* basis for years. The American study shows what can be done with a specially created agency to facilitate cooperation. Thus both books have more than passing relevance for Canadians. Further, both are written with an implicit concern for basic democratic values in educational and social change. As a result they are positive contributions to education in any democratic society.

T. R. Batten divides his book into three parts. The first surveys and deftly criticizes training policy and the selection and training of paid and volunteer personnel. He draws on experiences of over a dozen countries, bringing into focus for the North American the status of community development leadership training elsewhere in the world. The second part surveys comparatively the organization and methodology of training programs. However, the main attraction is the authors' evaluative description in Part III, of his own courses at the Colonial Department of the Institute of Education at London University. After twenty two years as Education Officer and college administrator in Nigeria and East Africa, the author began training courses for community development leaders at the London Institute in 1949. His approach thus combines breadth of practical experience with scholarly knowledge of his field. Using examples from



his courses, he devotes chapters to course goals, methods, finding content, securing participation, developing skills, meeting individual needs, and evaluation. The organization and use of student reading lists is an outstanding illustration. Paradoxically, the last chapter, on evaluation, ends in doubting that "meaningful criteria" can be found for evaluating a course designed to change attitudes and develop human-relations skills. He finds measurement "repugnant", saying he is committed to respecting people. Notwithstanding this paradox the book contributes important knowledge about training of adult leaders, not only community development leaders. Further, it permits the reader to see the evolution of basic educational processes outside the usual institutional labyrinth of schools or universities.

Sugg and Jones, in contrast to Batten, deal with innovation within the highly complex structures of state governments and higher education. Further, they deal with innovation in a specific region, where over forty million people traditionally rural and highly self-conscious of regional unity, were being transmuted following World War II into an urban-industrialized society with new connections in the American and world economies. Resurgence of race as a national social problem added complexity to the South's situation, where dual facilities in higher education were something of a regional norm. University officials in the 1930's had expressed approval of more regional cooperation, a reflection in part of the vigorous sociology of regionalism being developed by the South's sociologists, particularly Howard W. Odum. However, it was the Southern Governor's Conference that initiated the idea of a formal agreement among the States to promote regional cooperation in higher education. A compact was drawn up which was ratified by each State's legislature, leading to the establishment of "The Board of Control for Southern Regional Education" in 1948. The name was subsequently shortened to "The Southern Regional Education Board." The origins and early development of the Board are described in two chapters by the authors. Other chapters deal with regional educational programs, the mental health programs of the Board (an area of involvement requested by the Governors' Conference in 1953), research in higher education, Board organizational development, Board staffing and finance. A final chapter assesses the Board's first decade and anticipates its future. Appendices contain the Compact entered into by the sixteen Southern States, a roster of persons making up the Board, and a list of Board publications.

As a book, *The Southern Regional Education Board* is an economically written, insightful history which reports failures

as well as successes. More attention could have been given to regional context in which the Board was created and continues to operate. There is, for instance, no information on the nature or extent of higher education in the Region as a whole. However, the book contributes to education and social science in a number of ways. It is one of the comparatively rare accounts of inter-state government by compact. Since education in the United States and Canada is constitutionally a state-province responsibility, ways of surmounting state or provincial limitations are needed in regional adaptation or social change. It also is important to evolve alternatives to federal or provincial monopolies of educational control when a region has distinctive problems to be met by education. (The intrinsic value of the South's regional approach is demonstrated in the formation of two other regional boards in recent years, the New England Board of Higher Education and the Western Interstate Commission on Higher Education, with headquarters in Colorado.) Among the books' other contributions only two more can be mentioned. One is the description of how government at the executive, legislative and public opinion levels has been integrated with higher education at the administrative, teaching and research levels. Another is the knowledge of specific cooperative procedures and programs and their degree of success in the South's experience. Much of this experience would be relevant to Canadian regions and to Canada as a whole, which is still a small country population-wise, with limited higher education resources.

B. Y. Card

### BOOK REVIEW

Ruth Strang: *Helping Your Child Improve His Reading*. New York: E. P. Dutton and Co., Inc, 1962. \$5.25.

The purpose of this book is to give parents a background of understanding that will help them to determine their own roles in the reading development of their children. The book is organized to contain answers to almost all the common questions parents usually ask about the school reading program, their children's progress in reading, and the part parents can play in supplementing this program and in strengthening their children's reading skills. Each of the topics is dealt with in a clear, straight-forward manner in language remarkably free of technical terms and what is commonly known as "educational jargon."

This book can be of great value in correcting many of the misconceptions about the reading program in the schools. It



provides abundant ammunition with which to disarm critics and to dissipate the clouds of ignorance and prejudice that obscure the main issues in the teaching of reading. Not only parents but teachers themselves will find this book an inspiration and a guide.

Muriel Affleck

### BOOK REVIEW

*Design for Learning*, Reports submitted to the Joint Committee of the Toronto Board of Education and the University of Toronto (Toronto, University of Toronto Press, 1962), 148 p.

"Does teaching in the schools, or at least the secondary, reflect contemporary conceptions of the subjects being taught?" This was the central question about which the discussions which produced *Design for Learning* were clustered.

The product of a Joint Committee of the Toronto Board of Education and the University of Toronto, this slim volume is a strange admixture of theory, practicality, shrewd inferences, and naiveté. The editor, Northrop Frye, using Brunner's spiral curriculum as a focal reference, states that "the conception of the subject to be taught should be, not a conception of content, or of so much information to be 'covered,' but a conception of structure" (p. 8); the English Committee, pointing out that means have sometimes overshadowed ends, notes that "superficiality on the one hand and minute dissection on the other have damaged the teaching of English" (p. 23); the Science Committee reports that, although the Ontario syllabi called for more consideration of the topics of modern science, "hardly any concepts originating within the last hundred years are included, except for the mention of electrons, hydrogen bombs, and nuclear energy" (p. 129).

Much of what is said in this book has been said elsewhere, sometimes with more cogency and relevancy. Some of the statements seem strangely obsolete (e.g. the decision that geography and history need not be treated as entirely separate subjects); others are erroneous ("No fully successful school text has yet been tried on an extensive scale by teachers co-operating with linguists" is certainly not true). Furthermore, little reference is made to the results of research studies; rather, it is suggested that "research studies be implemented" (even when there is considerable research evidence already available in the professional literature).



Undoubtedly, the results of the deliberations which produced *Design for Learning* will bring about needed change in the Toronto City schools; unfortunately, it seems rather likely that they will be of little use elsewhere.

Ruth Godwin

### BOOK REVIEW

Marshall, M. V., *Societies and Their School Teachers*, monograph, Acadia University, 1962. Published through a grant from Social Science Research Council of Canada.

In 1931 M. V. Marshall published *Education as a Social Force*, a study of the Teacher Training Program in Nova Scotia. Thirty years later he used a year in Europe "to find out what those who train teachers think about using the schools for social purposes and what methods they use to give teachers such a social orientation and training." Very limited evidence was produced that British teachers use the schools to secure specific reforms in society; there was much more evidence that in local studies British teachers have found a major technique for producing searchers after solutions for the problems of society. Marshall describes numerous projects both in schools and teacher's colleges ranging from a grammar school employment survey used by both businessmen and local government to the sociological surveys of school areas undertaken by student teachers before they begin teaching. Marshall finds these "thrillingly suggestive" for Canadian practice. Like other educators for whom the University of London has organized investigations of community study techniques Marshall seems to have found himself on an educational road to Damascus. The old life of indoor, text-book knowledge is rejected for ever. It is to be hoped that Dean Marshall's enthusiasm will be widely infectious and that his concern for the social improvement of the Maritimes through education will not impede implementation of the more fundamental educational principle that the informed and involved citizen is best produced by the direct and scholarly study of the local society.

Evelyn Moore

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